VIRTUAL EQUAL ACCESS SERVICE

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VIRTUAL EQUAL ACCESS SERVICE

CONCURRING CARRIERS

NO CONNECTING CARRIERS

OTHER PARTICIPATING CARRIERS

NO OTHER PARTICIPATING CARRIERS

REGISTERED SERVICE MARKS

NONE

REGISTERED TRADEMARKS

NONE

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VIRTUAL EQUAL ACCESS SERVICE

EXPLANATION OF SYMBOLS

(C) - To signify changed regulation
(D) - To signify discontinued rate or regulation
(I) - To signify increase
(M) - To signify matter relocated without change
(N) - To signify new rate or regulation
(R) - To signify reduction
(S) - To signify reissued matter
(T) - To signify a change in text but no change in rate or regulation
(Z) - To signify a correction

EXPLANATION OF ABBREVIATIONS

ac	-	Alternating current
AML	-	Actual Measured Loss
ANI	-	Automatic Number Identification
AP	-	Program Audio
AT&T-C	-	AT&T Communications
BD	-	Business Day
BHMC	-	Busy Hour Minutes of Capacity
CAROT	-	Centralized Automatic Reporting on Trunks
CI	-	Changes Interface
CO	-	Central Office
COCTX	-	Central Office Centrex
Cont'd	-	Continued
CPE	-	Customer Provided Equipment
Ctx	-	Centrex
DA	-	Directory Assistance
dB	-	decibel
dBrnC	-	Decibel Reference Noise C-Message Weighing
dBrnCO	-	Decibel Reference Noise C-Message Weighted O
dBv	-	Decibel(s) Relative to 1 Volt (reference)
dBvl	-	Decibel(s) Relating to 1 Volt (reference)
dc	-	direct current
EDD	-	Envelope Delay Distortion
ELEPL	-	Equal Level Echo Path Loss
EML	-	Expected Measured Loss
EPL	-	Echo Path Loss
ERL	-	Echo Return Loss
ESS	-	Electronic Switching System
ESSX	-	Electronic Switching System Exchange
F	-	Frequency
FID	-	Field Identifier
F.C.C.	-	Federal Communications Commission
FX	-	Foreign Exchange
HC	-	High Capacity
Hz	-	Hertz

VIRTUAL EQUAL ACCESS SERVICE

EXPLANATION OF ABBREVIATIONS (Cont'd)

IC	-	Interexchange Carrier
ICB	-	Individual Case Basis
ICL	-	Inserted Connection Loss
kbps	-	kilobits per second
kHz	-	kilohertz
LATA	-	Local Access and Transport Area
Ma	-	milliamperes
Mbps	-	Megabits per second
MHz	-	Megahertz
MMUC	-	Minimum Monthly Usage Charge
MRC	-	Monthly Recurring Charge
MT	-	Metallic
MTS	-	Message Telecommunications Service(s)
NPA	-	Numbering Plan Area
NRC	-	Nonrecurring Charge
NTS	-	Non-Traffic Sensitive
NXX	-	Three-Digit Central Office Code
OTPL	-	Zero Transmission Level Point
PBX	-	Private Branch Exchange
PCM	-	Pulse Code Modulation
PLR	-	Private Line Ringdown
POI	-	Point of Interconnection
POT	-	Point of Termination
REC	-	Routing Exchange Carrier
RMS	-	Root-Mean-Square
RSM	-	Remote Switching Modules
RSS	-	Remote Switching Systems
SAC	-	Service Access Code
SRL	-	Singing Return Loss
SNN	-	Switched Service Network
TES	-	Telephone Exchange Service(s)
TG	-	Telegraph Grade
TLP	-	Transmission Level Point
TSPS	-	Traffic Service Position System
TV	-	Television
USOC	-	Uniform Service Order Code
VG	-	Voice Grade
V & H	-	Vertical & Horizontal
WATS	-	Wide Area Telecommunications Service(s)

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REFERENCE TO TECHNICAL PUBLICATIONS

The following technical publications are referenced in this tariff and may be obtained from Bell Communications Research, Inc., Distribution Storage Center, 60 New England Ave., Piscataway, NJ 08854. (X)

Technical Reference:

Multiple Exchange Carrier Access Billing (MECAB) Guidelines
Issued: November, 1987 Available: January, 1988

Multiple Exchange Carrier Ordering and Design (MECOD) Guidelines
Issued: November, 1985 Available: January, 1988

PUB 41451 High Capacity Terrestrial Digital Service
Issued: January, 1983 Available: May 17, 1983

PUB 41004 Data Communications using Voiceband Private Line Channels
Issued: October, 1983 Available: October, 1983

PUB 62310 Digital Data System Channel Interface Specification
Issued: September, 1983 Available: October, 1983

PUB 62411 High Capacity Digital Service Channel Interface Specification
Issued: September, 1983 Available: October, 1983

The following technical publication is referenced in this tariff and may be obtained from the Bell Communications Technical Education Center, Room BO2, 6200 Route 53, Lisle, IL 60532

Telecommunications Transmission Engineering
Vol 3 - Networks and Services (Chapters 6 and 7)
Issued: June, 1980 Available: June, 1980

The following technical publication is referenced in this tariff and may be obtained from the National Exchange Carrier Association, Inc., Executive Director - Tariff and Regulatory Matters, 100 South Jefferson Road, Whippany, NJ 07981 and the Federal Communications Commission's commercial contractor.

PUB AS No. 1, Issue II, Access Service
Issued: May, 1984 Available: May, 1984
Addendum: March, 1987 Available: March, 1987 (X)

(X) Issued under authority of Special Permission Number 92-624 of the Federal Communications Commission.

VIRTUAL EQUAL ACCESS SERVICE

1. Application of Tariff

1.1 This tariff contains regulations, rates and charges applicable to the provision of Switched Access Services and other miscellaneous services, hereinafter referred to collectively as service(s), provided by KIN Network Access Division, hereinafter referred to as KNAD, to customers.

1.2 The provision of such services by KNAD as set forth in this tariff does not constitute a joint undertaking with the customer or the Routing Exchange Carriers for the furnishing of any service.

Switched access services provided under this tariff covers only the use of KNAD's central access tandem and the switched transport between a KNAD premises and such central access tandem. End office switches served by KNAD's central access tandem are operated by the appropriate Routing Exchange Carrier. See 9.1 for listing of Routing Exchange Carriers. Therefore, any switched access services ordered under this tariff must be used with a like switched access service ordered by a Routing Exchange Carrier or vice versa.

2. General Regulations

2.1 Undertaking of KNAD

2.1.1 Scope

(A) KNAD does not undertake to transmit messages under this tariff.

VIRTUAL EQUAL ACCESS SERVICE

2. General Regulations (Cont'd)

2.1 Undertaking of KNAD (Cont'd)

2.1.1 Scope (Cont'd)

(B) KNAD shall be responsible only for the installation, operation and maintenance of the services it provides.

(C) KNAD will, for maintenance purposes, test its services only to the extent necessary to detect and/or clear troubles.

(D) Services are provided 24 hours daily, seven days per week, except as set forth in other applicable sections of this tariff.

(E) KNAD does not warrant that its facilities and services meet standards other than those set forth in this tariff.

2.1.2 Limitations

(A) The customer may not assign or transfer the use of services provided under this tariff; however, where there is no inter- ruption of use or relocation of the services, such assignment or transfer may be made to:

(1) another customer, whether an individual, partnership, association or corporation, provided the assignee or transferee assumes all outstanding indebtedness for such services, and the unexpired portion of the minimum period and the termination liability applicable to such services, if any; or

(2) a court-appointed receiver, trustee or other person acting pursuant to law in bankruptcy, receivership, reorganization, insolvency, liquidation or other similar proceedings, provided the assignee or transferee assumes the unexpired portion of the minimum period and the termination liability applicable to such services, if any.

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VIRTUAL EQUAL ACCESS SERVICE

2. General Regulations (Cont'd)

2.1 Undertaking of KNAD (Cont'd)

2.1.2 Limitations (Cont'd)

(A) (Cont'd)

In all cases of assignment or transfer, the written acknowledgment of KNAD is required prior to such assignment or transfer which acknowledgment shall be made within fifteen (15) days from the receipt of notification. All regulations and conditions contained in this tariff shall apply to such assignee or transferee. The assignment or transfer of services does not relieve or discharge the assignor or transferor from remaining jointly or severally liable with the assignee or transferee for any obligations existing at the time of the assignment or transfer.

(B) The use and restoration of services shall be in accordance with part 64, Subpart D of the Federal Communications Commission's Rules and regulations, which specifies the priority system for such activities.

(C) Subject to compliance with the rules mentioned in (B) preceding, the services offered herein will be provided to customers on a first-come, first-served basis. First-come, first-served shall be based upon the received time and date stamped by KNAD on customer orders which contain the information required for each respective service as delineated in other sections of this tariff. Customer orders shall not be deemed to have been received until such information is provided. Should questions arise which preclude order issuance due to missing information or the need for clarification, KNAD will attempt to seek such missing information or clarification on a verbal basis with written confirmation.

2.1.3 Liability

(A) KNAD's liability, if any, for its willful misconduct is not limited by this tariff.

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VIRTUAL EQUAL ACCESS SERVICE

2. General Regulations (Cont'd)

2.1 Undertaking of KNAD (Cont'd)

2.1.3 Liability (Cont'd)

(A) Cont'd

With respect to any other claim or suit, by a customer or by others, for damages associated with the installation, provision, termination, maintenance, repair or restoration of service, and subject to the provisions of (B) through (H) following, KNAD's liability if any, shall not exceed an amount equal to the proportionate charge for the service for the period during which the service was affected. This liability for damages shall be in addition to any amounts that may otherwise be due the customer under this tariff as a Credit Allowance for a Service Interruption.

(B) KNAD shall not be liable for any act or omission of any other carrier or customer providing a portion of a service, nor shall KNAD for its own act or omission hold liable any other carrier or customer providing a portion of a service.

(C) Reserved for Future Use

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VIRTUAL EQUAL ACCESS SERVICE

2. General Regulations (Cont'd)

2.1 Undertaking of KNAD (Cont'd)

2.1.3 Liability (Cont'd)

(D) Reserved for Future Use

VIRTUAL EQUAL ACCESS SERVICE

2. General Regulations (Cont'd)

2.1 Undertaking of KNAD (Cont'd)

2.1.3 Liability (Cont'd)

(E) KNAD shall be indemnified, defended and held harmless by the customer against any claim, loss or damage arising from its use of services offered under this tariff, involving:

(1) Claims for libel, slander, invasion of privacy, or infringement of copyright arising from any communications;

(2) Claims for patent infringement arising from combining or using the service furnished by KNAD in connection with facilities or equipment furnished by the customer; or

(3) All other claims arising out of any act or omission of the customer in the course of using services provided pursuant to this tariff.

(F) KNAD does not guarantee or make any warranty with respect to its services when used in an explosive atmosphere. KNAD shall be indemnified, defended and held harmless by the customer from any and all claims by any person relating to the customer's use of services so provided.

(G) No license under patents (other than the limited license to use) is granted by KNAD or shall be implied or arise by estoppel, with respect to any service offered under this tariff. KNAD will defend the customer against claims of patent infringement arising solely from the use by the customer of services offered under this tariff and will indemnify such customer for any damages awarded based solely on such claims.

(H) KNAD's failure to provide or maintain services under this tariff shall be excused by labor difficulties, governmental orders, civil commotions, criminal actions taken against KNAD, acts of God and other circumstances beyond KNAD's reasonable control, subject to the Credit Allowance for a Service Interruption as set forth in 2.4.4 following.

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2. General Regulations (Cont'd)

2.1 Undertaking of KNAD (Cont'd)

2.1.4 Provision of Services

The services offered under the provisions of this tariff are subject to availability. KNAD, to the extent that such services are or can be made available with reasonable effort, will provide to the customer upon reasonable notice services offered in other applicable sections of this tariff at rates and charges specified therein.

2.1.5 Installation and Termination of Services

The Virtual Equal Access Service provided under this tariff (A) includes KNAD's communication facilities up to the point of interconnection as defined in 2.6 following which denotes the demarcation point or network interface and (B) will be provided by KNAD to such point of interconnection. Any additional terminations at the customer's premises beyond such point of interconnection are the sole responsibility of the customer.

2.1.6 Maintenance of Services

The services provided under this tariff shall be maintained by KNAD. The customer or others may not rearrange, move, disconnect, remove or attempt to repair any facilities provided by KNAD, other than by connection or disconnection to any interface means used, except with the written consent of KNAD.

2.1.7 Changes and Substitutions

Except as provided for equipment and systems subject to F.C.C. Part 68 Regulations at 47 C.F.R. Section 68.110(b), KNAD may, where such action is reasonably required in the operation of its business, (A) substitute, change or rearrange any facilities used in providing service under this tariff, (B) change minimum protection criteria, (C) change operations or maintenance characteristics of facilities or (D) change operations or procedures of KNAD. In case of any such substitution, change or rearrangement, the transmission parameters will be within the range as set forth in Section 15 following. KNAD shall not be responsible if any such substitution, change or rearrangement renders any customer furnished services obsolete or requires modification or alteration thereof or otherwise affects their use or performance. If such substitution, change or rearrangement materially affects the operating characteristics of the facility, KNAD will provide reasonable notification to the new customer in writing. Reasonable time will be allowed for any redesign and implementation required by the change in operating characteristics. KNAD will work cooperatively with the customer to determine reasonable notification procedures.

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2. General Regulations (Cont'd)

2.1 Undertaking of KNAD (Cont'd)

2.1.8 Refusal and Discontinuance of Service

(A) Unless the provisions of 2.2.2 or 2.5 following apply, if the customer fails to comply with 2.1.6 preceding or 2.3.1, 2.3.6, 2.3.7 or 2.4 following, including any payments to be made by it on the dates and times herein specified, KNAD may, on thirty (30) days written notice by Certified U. S. Mail to the person designated by the customer to receive such notices of noncompliance, refuse additional applications for service and/or refuse to complete any pending orders for service at any time thereafter. If KNAD does not refuse additional applications for service on the date specified in the thirty (30) days notice, and the customer's noncompliance continues, nothing contained herein shall preclude KNAD's right to refuse additional applications for service without further notice to the noncomplying customer. Unless the provisions of 2.2.2 or 2.5 following apply, if the customer fails to comply with 2.1.6 preceding or 2.3.1, 2.3.6, 2.3.7 or 2.4 following, including any payments to be made by it on the dates and times herein specified, KNAD may, on thirty (30) days written notice by Certified U. S. Mail to the person designated by the customer to receive such notices of noncompliance, discontinue the provisions of the services involved at any time thereafter. In the case of such discontinuance, all applicable charges, including termination charges, shall become due. If KNAD does not discontinue the provision of the services involved on the date specified in the thirty (30) days notice, and the customer's noncompliance continues, nothing contained herein shall preclude KNAD's right to discontinue the provision of the services involved without further notice to the noncomplying customer.

VIRTUAL EQUAL ACCESS SERVICE

2. General Regulations (Cont'd)

2.1 Undertaking of KNAD (Cont'd)

2.1.9 Reserved for Future Use

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VIRTUAL EQUAL ACCESS SERVICE

2. General Regulations (Cont'd)

2.1 Undertaking of KNAD (Cont'd)

2.1.10 Notification of Service-Affecting Activities

KNAD will provide the customer timely notification of service-affecting activities that may occur during the normal operation of its business. Such activities may include, but are not limited to, equipment or facilities additions, removals or rearrangements, routine preventative maintenance and major switching machine change-out. Generally,such activities are not individual customer service specific; they affect many customer services. No specific advance notification period is applicable to all service activities. KNAD will work cooperatively with the customer to determine the reasonable notification requirements. With some emergency or unplanned service-affecting conditions, such as an outage resulting from cable damage, notification to the customer may not be possible.

2.1.11 Coordination with Respect to Network Contingencies

KNAD intends to work cooperatively with the customer to develop network contingency plans in order to maintain maximum network capability following natural or man-made disasters which affect telecommunications services, subject to the Restoration Priority requirements of Part 64 of the F.C.C.'s Rules.

2.2 Use

2.2.1 Interference or Impairment

(A) The characteristics and methods of operation of any circuits, facilities or equipment provided by others than KNAD and associated with the facilities utilized to provide services under this tariff shall not interfere with or impair service over any facilities of KNAD, its affiliated companies, or the Routing Exchange Carriers involved in its services, cause damage to their plant, impair the privacy of any communications carried over their facilities or create hazards to the employees of any of them or the public.

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2. General Regulations (Cont'd)

2.2 Use (Cont'd)

2.2.1 Interference or Impairment (Cont'd)

(B) Except as provided for equipment or systems subject to the F. C. C. part 68 Rules in 47 C.F.R. Section 68.108, if such characteristics or methods of operation are not in accordance with (A) preceding, KNAD will, where practicable, notify the customer that temporary discontinuance of the use of a service may be required; however, where prior notice is not practicable, nothing contained herein shall be deemed to preclude KNAD's right to temporarily discontinue forthwith the use of a service if such action is reasonable under the circumstances. In case of such temporary discontinuance, the customer will be promptly notified and afforded the opportunity to correct the condition which gave rise to the temporary discontinuance. During such period of temporary discontinuance, credit allowance for service interruptions as set forth in 2.4.4 following is not applicable.

2.2.2 Unlawful Use

The service provided under this tariff shall not be used for an unlawful purpose.

2.3 Obligations of the Customer

2.3.1 Damages

The customer shall reimburse KNAD for damages to KNAD's facilities utilized to provide services under this tariff caused by the negligence or willful act of the customer or resulting from improper use of KNAD's facilities, or due to malfunction of any facilities or equipment provided for or by the customer. KNAD will, upon reimbursement for damages, cooperate with the customer in prosecuting a claim against the person causing such damage and the customer shall be subrogated to the right of recovery by KNAD for the damages to the extent of such payment. Nothing in the foregoing provision shall be interpreted to hold one customer liable for another customer's actions.

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2. General Regulations (Cont'd)

2.3 Obligations of the Customer (Cont'd)

2.3.2 Ownership of Facilities and Theft

Facilities utilized by KNAD to provide service under the provisions of this tariff shall remain the property of KNAD. Such facilities shall be returned to KNAD by the customer in as good a condition as reasonable wear will permit.

2.3.3 Reserved for Future Use

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2. General Regulations (Cont'd)

2.3 Obligations of the Customer (Cont'd)

2.3.4 Reserved for Future Use

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2. General Regulations (Cont'd)

2.3 Obligations of the Customer (Cont'd)

2.3.5 Reserved for Future Use

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2. General Regulations (Cont'd)

2.3 Obligations of the Customer (Cont'd)

2.3.6 Availability for Testing

The facilities provided under this tariff shall be available to KNAD at times mutually agreed upon in order to permit KNAD to make tests and adjustments appropriate for maintaining the services in satisfactory operating condition. Such tests and adjustments shall be completed within a reasonable time. No credit will be allowed for any interruptions involved during such tests and adjustments.

2.3.7 Balance

All signals for transmission over the services provided under this tariff shall be delivered by the customer balanced to ground.

2.3.8 Design of Customer Services

Subject to the provisions of 2.1.7 preceding, the customer shall be solely responsible, at its own expense, for the overall design of its services and for any redesigning or rearrangement of its services which may be require because of changes in facilities, operations or procedures of KNAD, minimum protection criteria or operating or maintenance characteristics of the facilities.

2.3.9 Reference to KNAD Network

The customer may advise End Users that certain services are provided by KNAD in connection with the service the customer furnishes to End Users; however, the customer shall not represent that KNAD jointly participates in the customer's services.

2.3.10 Reserved for Future Use

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2. General Regulations (Cont'd)

2.3 Obligations of the Customer (Cont'd)

2.3.11 Claims and Demands for Damages

(A) With respect to claims of patent infringement made by third persons, the customer shall defend, indemnify, protect and save harmless KNAD from and against all claims arising out of the combining with, or use in connection with, the services provided under this tariff, any circuit, apparatus, system or method provided by the customer.

(B) The customer shall defend, indemnify and save harmless KNAD from and against suits, claims, losses or damages including punitive damages, attorneys' fees and court costs by third persons arising out of the construction, installation, operation, maintenance, or removal of the customer's circuits, facilities, or equipment connected to KNAD's services provided under this tariff, including, without limitation, Worker's Compensation claims, actions for infringement of copyright and/or unauthorized use of program material, libel and slander actions based on the content and communications transmitted over the customer's circuits, facilities or equipment, and proceedings to recover taxes, fines or penalties for failure of the customer to obtain or maintain in effect any necessary certificates, permits, licenses, or other authority to acquire or operate the services provided under this tariff; provided, however, the foregoing indemnification shall not apply to suits, claims, and demands to recover damages for damage to property, death, or personal injury unless such suits, claims or demands are based on the tortious conduct of the customer, its officers, agents or employees.

(C) Reserved for Future Use

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2. General Regulations (Cont'd)

2.3 Obligations of the Customer (Cont'd)

2.3.11 Claims and Demands for Damages (Cont'd)

(D) The customer shall defend, indemnify and save harmless KNAD from and against any suits, claims, losses or damages, including punitive damages, attorneys' fees and court costs by the customer or third parties arising out of any act or omission of the customer in the course of using services provided under this tariff.

2.3.12 Coordination with Respect to Network Contingencies

The customer shall, in cooperation with KNAD, coordinate in planning the actions to be taken to maintain maximum network capability following natural or man-made disasters which affect telecommunications services.

2.3.13 Jurisdictional Report Requirements

(A) Jurisdictional Reports

(1) (a) When a customer orders Feature Groups A Switched Access Service, the Customer shall state in its order the projected interstate percentage for interstate usage for each Feature Groups A Switched Access Service group ordered. The term group shall be construed to mean single lines or trunks as well. (C) (C)

(D)

(D)

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2. General Regulations (Cont'd)

2.3 Obligations of the Customer (Cont'd)

2.3.13 Jurisdictional Report Requirements (Cont'd)

(A) Jurisdictional Reports (Cont'd)

(1)

(D)
|
(D)

(c) The projected interstate percentages will be used by KNAD to apportion the usage between interstate and intrastate until a revised report is received as set forth in (7) following.

(2) All single Feature Groups A Switched Access Service usage and charges will be apportioned by KNAD between interstate and intrastate. The projected interstate percentage reported as set forth in 1(a) and 1(b) preceding will be used to make such apportionment. (C)

(3) For multiline hunt group arrangements where either the interstate or the intrastate charges are based on measured usage, the interstate Feature Groups A Switched Access Service(s) (C) information reported as set forth in (1) preceding will be used to determine the charges as follows:

For all groups the number of access minutes for a group will be multiplied by the projected interstate percentage to develop the interstate access minutes. The number of access minutes for the group minus the developed interstate access minutes for the group will be the developed intrastate access minutes.

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2. General Regulations (Cont'd)

2.3 Obligations of the Customer (Cont'd)

2.3.13 Jurisdictional Report Requirements (Cont'd)

(A) Jurisdictional Reports (Cont'd)

(4) When a customer orders Feature Group D Switched Access Service, KNAD, where the jurisdiction can be determined from the call detail, will, unless the customer provides the projected interstate percentage for interstate usage for each end office group in its order, determine the projected interstate percentage as follows:

For originating access minutes, the projected interstate percentage will be developed on a monthly basis by end office when the Feature Group D Switched Access Service access minutes are measured by dividing the measured interstate originating access minutes (the access minutes where the calling number is in one state and the called number is in another state) by the total originating access minutes when the call detail is adequate to determine the appropriate jurisdiction. For terminating access minutes, the data used by KNAD to develop the projected interstate percentage for originating access minutes will be used to develop projected interstate percentage for such terminating access minutes. When originating call details are insufficient to determine the jurisdiction for the call, the customer shall supply the projected interstate percentage or authorize KNAD to use the KNAD developed percentage. This percentage shall be used by KNAD as the interstate percentage for such call detail. KNAD will designate the number obtained by subtracting the projected interstate percentage for originating and terminating access minutes calculated by KNAD from 100 (100 - calculated projected interstate percentage = intrastate percentage) as the projected intrastate percentage of use.

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2. General Regulations (Cont'd)

2.3 Obligations of the Customer (Cont'd)

2.3.13 Jurisdictional Report Requirements (Cont'd)

(A) Jurisdictional Reports (Cont'd)

(5) Reserved for Future Use.

VIRTUAL EQUAL ACCESS SERVICE

2. General Regulations (Cont'd)

2.3 Obligations of the Customer (Cont'd)

2.3.13 Jurisdictional Report Requirements (Cont'd)

(A) Jurisdictional Reports (Cont'd)

(6) Except where KNAD measured access minutes are used as set forth in (4) preceding, the customer reported interstate percentage of use, as set forth in (1) or (4) preceding, will be used until the customer reports a different projected interstate percentage for an in-service end office group. When the customer adds BHMC, lines or trunks to an existing end office group, the customer shall furnish a projected interstate percentage that applies to the added BHMC, lines or trunks. When a customer discontinues BHMC, lines or trunks from an existing group, the customer shall furnish a projected interstate percentage for the discontinued BHMC, lines or trunks in the end office group. The revised report will serve as the basis for future billing and will be effective on the next bill date. No prorating or back billing will be done based on the report.

(7) Effective on the first of January, April, July and October of each year, the customer shall update the intrastate and interstate jurisdictional report. The customer shall forward to KNAD, to be received no later than fifteen (15) calendar days after the first of each such month, a revised report showing the interstate and intrastate percentage of use for the past three (3) months ending the last day of December, March, June and September, respectively, for each service arranged for interstate use. Except as set forth in (4) preceding, where jurisdiction can be determined from the call detail, the revised report will serve as the basis for the next three (3) months billing and will be effective on the bill date in the following month (i.e., February, May, August and November) for that service. No prorating or backbilling will be done based on the report. If the customer does not supply the report, KNAD will assume the percentages to be the same as that provided in the last quarterly report. For those cases in which a quarterly report has never been received from the customer., KNAD will assume the percentages to be the same as that provided in the order for service as set forth in (A) preceding.

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2. General Regulations (Cont'd)

2.3 Obligations of the Customer (Cont'd)

2.3.13 Jurisdictional Report Requirements (Cont'd)

(B) Support Documentation: The Customer shall keep sufficient detail from which the percentage of interstate use can be ascertained and upon request of KNAD make the records available for inspection. Such a request will be initiated by KNAD no more than once a year. The customer shall supply the data within thirty (30) calendar days of KNAD's request.

2.3.14 Determination of Interstate Charges for Mixed Interstate and Intrastate Access Service

When mixed interstate and intrastate Access Service is provided, all charges will be prorated between interstate and intrastate. The percentages provided in the reports, as set forth in 2.3.14(A) preceding, will serve as the basis for calculating the charges. The percentages of an Access Service to be charged as interstate are applied in the following manner:

(A) Monthly and Nonrecurring Charges

For monthly and nonrecurring chargeable rate elements, multiply the percentage interstate use times the quantity of chargeable elements times the stated tariff rate.

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VIRTUAL EQUAL ACCESS SERVICE

2. General Regulations (Cont'd)

2.3 Obligations of the Customer (Cont'd)

2.3.14 Determination of Interstate Charges for Mixed Interstate and Intrastate Access Service (Cont'd)

(B) Usage-Sensitive Charges

For usage sensitive (i.e., access minutes and calls, chargeable rate elements), charges are calculated as follows:

(1) multiply the percent interstate use times actual use (i.e., measured) times the stated tariff rate.

The interstate percentage will change as revised usage reports are submitted or a revised percentage is calculated as set forth in 2.3.14 preceding.

2.4 Payment Arrangements and Credit Allowances

2.4.1 Payment of Rates, Charges and Deposits

(A) KNAD will, in order to safeguard its interests, only require a customer which has a proven history of late payments to KNAD or does not have established credit, except for a customer which is a successor of a company which has established credit and has no history of late payments to KNAD, to make a deposit prior to or at any time after the provision of a service to the customer to be held by KNAD as a guarantee of the payment of rates and charges. Such deposit may not exceed the actual or estimated rates and charges for the service for a one month period. The fact that a deposit has been made in no way relieves the customer from complying with KNAD's regulations as to the prompt payment of bills. At such time as the provision of the service to the customer is terminated, the amount of the deposit may be credited to the customer's account and any credit balance which may remain will be refunded. At the option of KNAD, such a deposit may be refunded or credited to the customer's account when the customer has

VIRTUAL EQUAL ACCESS SERVICE

2. General Regulations (Cont'd)

2.4 Payment Arrangements and Credit Allowances (Cont'd)

2.4.1 Payment of Rates, Charges and Deposits (Cont'd)

(A) (Cont'd)

established credit or after the customer has established a one-year prompt payment record at any time prior to the termination of the provision of the service to the customer. In the case of a cash deposit, for the period the deposit is held by KNAD, the customer will receive interest pursuant to the rules and regulations of the State Corporation Commission. The interest rate will be applied for the number of days from the date the customer deposit is received by KNAD to and including the date such deposit is credited to the customer's account or the date the deposit is refunded by KNAD. Should a deposit be credited to the customer's account, as indicated above, no interest will accrue on the deposit from the date such deposit is credited to the customer's account.

(B) KNAD shall bill on a current basis all charges incurred by and credits due to the customer under this tariff attributable to services established or discontinued during the preceding billing period. In addition, KNAD shall bill in advance, charges for all services to be provided during the ensuing billing period except for charges associated with service usage which will be billed in arrears. The bill day (i.e., the billing date of a bill for a customer for Access Service under this tariff), the period of service each bill covers and the payment date will be as follows:

(1) KNAD will establish a bill day each month for each customer account. The bill will cover nonusage sensitive service charges for the ensuing billing period for which the bill is rendered, any known unbilled nonusage sensitive charges for prior periods and unbilled usage charges for prior periods and unbilled usage charges

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2. General Regulations (Cont'd)

2.4 Payment Arrangements and Credit Allowances (Cont'd)

2.4.1 Payment of Rates, Charges and Deposits (Cont'd)

(B) (Cont'd)

(1) (Cont'd)

for the period after the last bill day through the current bill day. Any known unbilled usage charges for prior periods and any known unbilled adjustments will be applied to this bill. Payment for such bills is due as set forth in (2) following. If payment is not received by the payment date, as set forth in (2) following, in immediately available funds, a late payment penalty will apply as set forth in (2) following.

(2) (a) All bills dated, as set forth in (1) preceding, for service provided to the customer by KNAD, are due on or before the Due Date noted on the Billing Statement which will be ten (10) days after the bill has been mailed, except as provided herein, and are payable in immediately available funds. If such payment date would cause payment to be due on a Saturday, Sunday or legal Holiday payment for such bills will be due from the customer the next working day.

(2) (b) Further, if any portion of the payment is received by KNAD after the payment date as set forth in (a) preceding, or if any portion of the payment is received by KNAD in funds which are not immediately available to KNAD, then a late payment penalty shall be due to KNAD. The late payment penalty shall be the portion of the payment not received by the payment date times a late factor. The late factor shall be:

VIRTUAL EQUAL ACCESS SERVICE

2. General Regulations (Cont'd)

2.4 Payment Arrangements and Credit Allowances (Cont'd)

2.4.1 Payment of Rates, Charges and Deposits (Cont'd)

(B) (Cont'd)

(2) (b) (Cont'd)

A one-time monthly rate of 1 1/2 percent or, at the maximum a lawful rate of applicable Kansas Corporation Commission regulations. Kansas Corporation Commission postmark rule will be effective.

(2) (c) In the event a Customer disputes in writing an amount due KNAD, the Customer shall pay to KNAD any amount not in dispute and the amount remaining in dispute shall be resolved in compliance with Kansas Corporation Commission bill dispute resolution procedures. If applicable procedures are not in effect, the Customer shall pay to KNAD any amount not in dispute and shall deposit into escrow the disputed amount and may use the commission's complaint procedure to resolve the dispute. KNAD may utilize standard collection practices or Service discontinuation procedures except to the extent such practices or procedures are prohibited by commission order or operative law.

(C) Restoration of Service

(1) At the option of KNAD, restoration of previously established, but subsequently disconnected, Service may require the Customer to follow the procedure for instituting new Service.

(2) For any restoration of Service, a reconnection charge equal to the installation charge will be assessed to the customer as a prepayment, nonrecurring fee.

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2. General Regulations (Cont'd)

2.4 Payment Arrangements and Credit Allowances (Cont'd)

2.4.1 Payment of Rates, Charges and Deposits (Cont'd)

(D) Adjustments for the quantities of services established or discontinued in any billing period beyond the minimum period set forth for services in other sections of this tariff will be prorated to the number of days or major fraction of days based on a thirty (30) day month.

(E) KNAD will, upon request, furnish within thirty (30) days of a request at no charge to the customer such detailed information as may reasonably be required for verification of any bill.

(F) When a rate as set forth in this tariff is shown to more than two decimal places, the charges will be determined using the rate shown. The resulting amount will then be rounded to the nearest penny (i.e., rounded to two decimal places).

(G) When more than one copy of a customer bill for services provided under the provisions of this tariff is furnished to the customer, an additional charge applies for each additional copy of the bill as set forth in 13.3.5 following.

2.4.2 Minimum Periods

The minimum periods for which services are provided and for which rates and charges are applicable is one (1) month, except as otherwise specified.

2.4.3 Cancellation of an Order for Service

Provisions for the cancellation of an order for service are set forth in 5.2.2(B) and 5.2.3 following.

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2. General Regulations (Cont'd)

2.4 Payment Arrangements and Credit Allowances (Cont'd)

2.4.4 Credit Allowance for Service Interruptions

(A) General

A service is interrupted when it becomes unusable to the customer because of a failure of a facility component used to furnish service under this tariff or in the event that the protective controls applied by KNAD result in the complete loss of service by the customer as set forth in 6.5.1 following. An interruption period starts when an inoperative service is reported to KNAD, or when KNAD becomes aware of the service interruption, and ends when the service is operative.

(B) When a Credit Allowance Applies

In case of an interruption to any service, allowance for the period of interruption, if not due to the negligence of the customer, shall be as follows:

(1) For Switched Access Service, no credit shall be allowed for an interruption of less than twenty-four (24) hours. The customer shall be credited for an interruption of twenty-four (24) hours or more at the rate of 1/30 of any applicable monthly rates for each period of twenty-four (24) hours or major fraction thereof that the interruption continues.

(2) The credit allowance(s) for an interruption or for a series of interruptions shall not exceed any monthly rate for the service interrupted in any one monthly billing period.

(3) Reserved for Future Use.

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2. General Regulations (Cont'd)

2.4 Payment Arrangements and Credit Allowances (Cont'd)

2.4.4 Credit Allowance for Service Interruptions (Cont'd)

(C) When a Credit Allowance Does Not Apply

No credit allowance will be made for:

(1) Interruptions caused by the negligence of the customer.

(2) Interruptions of a service due to the failure of equipment or systems provided by the customer or others.

(3) Interruptions of a service during any period in which KNAD is not afforded access to the location where the service is terminated.

(4) Interruptions of a service for maintenance purposes, to make rearrangements, or for the implementation of an order for a change in the service during the time that was negotiated with the customer. Thereafter, a credit allowance as set forth in (B) preceding applies.

(5) Reserved for Future Use.

VIRTUAL EQUAL ACCESS SERVICE

2. General Regulations (Cont'd)

2.4 Payment Arrangements and Credit Allowances (Cont'd)

2.4.4 Credit Allowance for Service Interruptions (Cont'd)

(C) When a Credit Allowance Does Not Apply (Cont'd)

(6) Periods when the customer continues to use the service on an impaired basis.

(7) Periods of temporary discontinuance as set forth in 2.2.2 preceding.

(8) An interruption or a group of interruptions, resulting from a common cause, for amounts less than one dollar ($1.00).

(9) Periods of interruption as set forth in 13.3.1 following.

(10) Interruption of service caused by a customer's failure to provide notification to KNAD of media stimulated mass calling events as set forth in 6.6.5 following.

(D) Reserved for Future Use.

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2. General Regulations (Cont'd)

2.4 Payment Arrangements and Credit Allowances (Cont'd)

2.4.4 Credit Allowance for Service Interruptions (Cont'd)

(E) Temporary Surrender of a Service

In certain instances, the customer may be requested by KNAD to surrender a service for purposes other than maintenance, testing or activity relating to a service order. If the customer consents, a credit allowance will be granted. The credit allowance will be 1/1440 of the monthly rate for each period of thirty (30) minutes or fraction thereof that the service is surrendered. In no case will the credit allowance exceed the monthly rate for the service surrendered in any one (1) monthly billing period.

2.4.5 Title or Ownership Rights

(A) The payment of rates and charges by customers for the services offered under the provisions of this tariff does not assign, confer or transfer title or ownership rights to proposals or facilities developed or utilized, respectively, by KNAD in the provision of such services.

2.4.6 Rating and Billing of Access Services Provided by KNAD and Routing Exchange Carriers

KNAD will handle rating and billing of the Access Services under this tariff as follows.

(A) KNAD will provide the Switched Access and Access Transport between KNAD's central access tandem and another KNAD premises set forth in Section 8 following and bill the charges in accordance with its Virtual Equal Access Tariff. KNAD's rates for the Switched Access and Access Transport elements are as set forth in 6.8.1 following. The Routing Exchange Carrier will provide the Switched Access element between a KNAD premises listed in Section 8.2 following and

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2. General Regulation and Credit Allowances (Cont'd)

2.4 Payment Arrangements and Credit Allowances (Cont'd)

2.4.6 Rating and Billing of Access Services Provided By KNAD and Routing Exchange Carriers (Cont'd)

(A) (Cont'd)

the end office switch(s) served by KNAD's central access tandem and will bill the charges in accordance with its Access Service tariff.

2.5 Connections

2.5.1 General

Equipment and Systems (i.e., terminal equipment, multiline terminating systems and communications systems) may be connected with Switched Access Service furnished by KNAD where such connection is made in accordance with the provisions specified in Technical Reference Publication AS No. 1 and in 2.1 preceding.

2.6 Definitions

Certain terms used herein are defined as follows:

Access Code

The term "Access Code" denotes a uniform five (5) or.seven (7) digit code assigned by the Routing Exchange Carrier to an individual customer. The five (5) digit code has the form 10XXX, and the seven (7) digit code has the form 950-0XXX or 950-1XXX.

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2. General Regulations (Cont'd)

2.6 Definitions (Cont'd)

Access Minutes

The term "Access Minutes" denotes the usage of exchange facilities in interstate service for the purpose of calculating chargeable usage.

Access Tandem

The term "Access Tandem" denotes a switching system that provides a concentration and distribution function for originating and terminating traffic between end offices and a customer's premises.

Answer/Disconnect Supervision

The term "Answer/Disconnect Supervision" denotes the transmission of the switch trunk equipment supervisory signal (off-hook or on-hook) to the customer's point of termination as an indication that the called party has answered or disconnected.

Attenuation Distortion

The term "Attenuation Distortion" denotes the deference in loss at specified frequencies relative to the loss at 1004 Hz, unless otherwise specified.

Balance (100 Type) Test line

The term "Balance (100 Type) Test Line" denotes an arrangement which provides for balance and noise testing.

Bit

The term "Bit" denotes the smallest unit of information in the binary system of notation.

Business Day

The term "Business Day" denotes the time of day that KNAD is open for business. Business day hours are from 8:00 A.M. to 5:00 P.M. with an hour for lunch, Monday through Friday, resulting in a standard forty (40) hour work week.

VIRTUAL EQUAL ACCESS SERVICE

2. General Regulations (Cont'd)

2.6 Definitions (Cont'd)

Busy Hour Minutes of Capacity (BHMC)

The term "Busy Hour Minutes of Capacity (BHMC)" denotes the customer specified maximum amount of Switched Access Service access minutes the customer expects to be handled in an end office switch during any hour in 8:00 A.M. to 11:00 P.M. period for the Feature Group ordered.

Call

The term "Call" denotes a customer attempt for which the complete address code (e.g., 0-, 911, or 7 digits) is provided to the serving dial tone office.

CCS

The term "CCS" denotes a hundred call seconds, which is a standard unit of traffic load that is equal to one hundred (100) seconds of usage or capacity of a group of servers (e.g., trunks).

Central Office Prefix

The term "Central Office Prefix" denotes the first three (3) digits (NXX) of the seven (7) digit telephone number assigned to a customer's Telephone Exchange Service when dialed on a local basis.

Channel(s)

The term "Channel(s)" denotes an electrical or photonic, in the case of fiber optic-based transmission systems, communications path between two (2) or more points of termination.

Channelize

The term "Channelize" denotes the process of multiplexing demultiplexing wider bandwidth or higher speed channels into narrower band-width or lower speed channels.

C-Message Noise

The term "C-Message Noise" denotes the frequency weighted average notice within an idle voice channel.

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2. General Regulations (Cont'd)

2.6 Definitions (Cont'd)

C-Message Noise (Cont'd)

The frequency weighing, called C-message, is used to simulate the frequency characteristic of the 500-type telephone set and the hearing of the average subscriber.

C-Notched Noise

The term "C-Notched Noise" denotes the C-message frequency weighted noise on a voice channel with a holding tone, which is removed at the measuring end through a notch (very narrow band) filter.

Communications System

The term "Communications System" denotes channels and other facilities which are capable of communications between terminal equipment provided by other than KNAD.

Customer(s)

The term "Customers" denotes any individual, partnership, association, joint-stock company, trust, corporation, or governmental entity or other entity which subscribes to the services offered under this tariff.

Data Transmission (107 Type) Test Line

The term "Data Transmission (107 Type) Test Line" denotes an arrangement which provides for a connection to a signal source which provides test signals for one-way testing or data and voice transmission parameters.

Decibel

The term "Decibel" denotes a unit used to express relative difference in power, usually between acoustic or electric signals, equal to ten (10) times the common logarithm of the ratio of two (2) signal powers.

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2. General Regulations (Cont'd)

2.6 Definitions (Cont'd)

Decibel Reference Noise C-Message Weighting

The term "Decibel Reference Noise C-Message Weighting" denotes noise power measurements with C-Message weighting in decibels relative to a reference 1000 Hz tone of 90 dB below one (1) milliwatt.

Decibel Reference Noise C-Message Referenced to 0

The term "Decibel Reference Noise C-Message Referenced to 0" denotes noise power in "Decibel Reference Noise C-Message Weighting" referenced to or measured at a zero transmission level point.

Detail Billing

The term "Detail Billing" denotes the listing of each message and/or rate element for which charges to a customer are due on a bill prepared by KNAD.

Echo Control

The term "Echo Control" denotes the control of reflected signals in a transmission path.

Echo Path Loss

The term "Echo Path Loss" denotes the measure of reflected signal at a 4-wire point of interconnection without regard to the send and receive Transmission Level Point.

Echo Return Loss

The term "Echo Return Loss" denotes a frequency weighted measure of return loss over the middle of the voiceband (approximately five hundred (500) to twenty-five hundred (2500) Hz), where talker echo is most annoying.

End Office Switch

The term "End Office Switch" denotes an Exchange Telephone Company switching system where Telephone Exchange Service customer station loops are terminated for purposes of interconnection to trunks. Included are Remote

VIRTUAL EQUAL ACCESS SERVICE

2. General Regulations (Cont'd)

2.6 Definitions (Cont'd)

End Office Switch (Cont'd)

Switching Modules and Remote Switching Systems served by a host office in a different wire center.

End User

The term "End User" means any customer of an interstate or foreign telecommunications service that is not a carrier, except that a carrier other than a telephone company shall be deemed to be an "end user" when such carrier uses a telecommunications service for administrative purposes, and a person or entity that offers telecommunications service exclusively as a reseller shall be deemed to be an "end user" if all resale transmissions offered by such reseller originate on the premises of such reseller.

Entry Switch

See First Point of Switching.

Envelope Delay Distortion

The term "Envelope Delay Distortion" denotes a measure of the linearity of the phase versus frequency of a channel.

Equal Level Echo Path Loss

The term "Equal Level Echo Path Loss" (ELEPL) denotes the measure of Echo Path Loss (EPL) at a 4-wire interface which is covered by the difference between the send and receive Transmission Level Point (TLP) [ELEPL = EPL - TLP (send) + TLP (receive)].

Exchange

The term "Exchange" denotes a unit generally smaller than a Local Access and Transport Area, established by communications service in a specified area which usually embraces a city, town or village and its environs. It consists of one or more central offices together with the associated facilities used in furnishing communications service within that area. The exchange includes any Extended Area Service area that is an enlargement of an Exchange Telephone Company's exchange area to include nearby exchanges. One or more designated exchanges comprise a given Local Access and Transport Area.

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2. General Regulations (Cont'd)

2.6 Definitions (Cont'd)

Exchange Telephone Company

The term "Exchange Telephone Company" denotes a carrier that provides service within a telephone exchange, or within a connected system of telephone exchanges within the same exchange area operated to furnish to subscribers intercommunicating service of the character ordinarily furnished by a single exchange and which is covered by the exchange service charge.

Expected Measured Loss

The term "Expected Measured Loss" denotes a calculated loss which specifies the end-to-end 1004 Hz loss on a terminated test connection between two (2) readily accessible manual or remote test points. It is the sum of the inserted connection loss and test access loss included any test pads.

Field Identifier

The term "Field Identifier" denotes two (2) or four (4) characters that are used on service orders to convey specific instructions. Field Identifiers may or may not have associated data. Selected Field Identifiers are used in billing systems to generate nonrecurring charges.

First Come - First Served

The term "First Come - First Served" denotes a procedure followed when a shortage of facilities or equipment occurs, such that a service ordered cannot be provided. The orders delayed by the shortage of facilities will be prioritized according to the sequence in which they were received. That is, when facilities or equipment become available, the first order received will be the first order processed.

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2. General Regulations (Cont'd)

2.6 Definitions (Cont'd)

First Point of Switching

The term "First Point of Switching" denotes the first KNAD location at which switching occurs on the terminating path of a call proceeding from the customer's premises to the terminating end office and, at the same time, the last KNAD location at which switching occurs on the originating path of a call proceeding from the originating end office to the customer's premises.

Frequency Shift

The term "Frequency Shift" denotes the change in the frequency of a tone as it is transmitted over a channel.

Grandfathered

The term "Grandfathered" denotes Terminal Equipment, Multiline Terminating Systems and Protective Circuitry directly connected to the facilities utilized to provide services under the provisions of this tariff, and which are considered Grandfathered under Part 68 of the F.C.C.'s Rules and Regulations.

Home

The term "Home" refers to the directing of calls to a specific toll center location or Class 4 office.

Host Office

The term "Host Office" denotes an electronic switching system which provides call processing capabilities for one or more Remote Switching Modules or Remote Switching Systems.

Immediately Available Funds

The term "Immediately Available Funds" denotes a corporate or personal check drawn on a bank account and funds which are available for use by the receiving party on the same day on which they are received and include U. S. Federal Reserve Bank wire transfers, U. S. Federal Reserve notes (paper cash), U. S. coins, U. S. Postal Money Order and New York Certificates of Deposit.

VIRTUAL EQUAL ACCESS SERVICE

2. General Regulations

2.6 Definitions (Cont'd)

Impedance Balance

The term "Impedance Balance" denotes the method of expressing Echo Return Loss and Singing Return Loss at a 4-wire interface whereby the gains and/or loss of the 4-wire portion of the transmission path, including the hybrid, are not included in the specification.

Impulse Noise

The term "Impulse Noise" denotes any momentary occurrence of the noise on a channel over a specified level threshold. It is evaluated by counting the number of occurrences which exceed the threshold.

Inserted Connection Loss

The term "Inserted Connection Loss" denotes the 1004 Hz power difference (in dB) between the maximum power available at the originating end and the actual power reaching the terminating end through the inserted connection.

Interexchange Carrier (IC) or Interexchange Common Carrier

The terms "Interexchange Carrier"(IC) or "Interexchange Common Carrier" denotes any individual, partnership, association, joint-stock company, trust, governmental entity or corporation engaged for hire in interstate or foreign communications by wire or radio, between two (2) or more exchanges.

Intermodulation Distortion

The term "Intermodulation Distortion" denotes a measure of the nonlinearity of a channel. It is measured using four (4) tones, and evaluating the ratios (in dB) of the transmitted composite four-tone signal power to the second-order products of the tones (R2), and the third-order products of the tones (R3).

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VIRTUAL EQUAL ACCESS SERVICE

2. General Regulations (Cont'd)

2.6 Definitions (Cont'd)

Interstate Communications

The term "Interstate Communications" denotes both interstate and foreign communications.

Intrastate Communications

The term "Intrastate Communications" denotes any communications within a state subject to oversight by a state regulatory commission as provided by the laws of the state involved.

Line-Side Connection

The term "Line-Side Connection" denotes a connection of a transmission path to the line side of a switching system.

Local Access and Transport Area

The term "Local Access and Transport Area" denotes a geographic area established for the provision and administration of communications service. It encompasses one or more designated exchanges, which are grouped to serve common social, economic and other purposes.

Local Tandem Switch

The term "Local Tandem Switch" denotes a local Telephone Company switching unit by which local or access telephonic communications are switched to and from an End Office Switch.

Loop Around Test Line

The term "Loop Around Test Line" denotes an arrangement to provide a means to make certain two-way transmission tests on a manual basis. This arrangement has two terminations, each reached by means of separate telephone numbers and does not require any specific customer equipment. Equipment subject to this test arrangement is at the discretion of the customer.

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2. General Regulations (Cont'd)

2.6 Definitions (Cont'd)

Loss Deviation

The term "Loss Deviation" denotes the variation of the actual loss from the designed value.

Major Fraction Thereof

The term "Major Fraction Thereof" is any period of time in excess of one half (1/2) of the stated amount of time. As an example, in considering a period of twenty-four (24) hours, a major fraction thereof would be any period of time in excess of twelve (12) hours exactly. Therefore, if a given service is interrupted for a period of thirty-six (36) hours and fifteen (15) minutes, the customer would be given a credit allowance for two (2) twenty-four (24) hour periods for a total of forty-eight (48) hours.

Message

The term "Message" denotes a "call" as defined preceding.

Milliwatt (102 Type) Test Line

The term Milliwatt (102 Type) Test Line" denotes an arrangement which provides a 1004 Hz tone at 0 dBmO for one-way transmission measurements towards the customer's point of termination from a Routing Exchange Carrier end office.

Network Control Signaling

The term "Network Control Signaling" denotes the transmission of signals used in the telecommunications system which perform functions such as supervision (control, status, and charge signals), address signaling (e.g., dialing), calling and called number identifications, rate of flow, service selection error control and audible tone signals (call progress signals indicating re-order or busy conditions, alerting, coin denominations, coin collection and coin return tones) to control the operation of the telecommunications systems.

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2. General Regulations (Cont'd)

2.6 Definitions (Cont'd)

Nonsynchronous Test Line

The term "Nonsynchronous Test Line" denotes an arrangement which provides operational tests which are not as complete as those provided by the synchronous test lines, but can be made more rapidly.

North American Numbering Plan

The term "North American Numbering Plan" denotes a three-digit area (Numbering Plan Area) code and a seven-digit telephone number made up of a three-digit Central Office code plus a four-digit station number.

Off-Hook

The term "Off-hook" denotes the active condition of Switched Access or a Telephone Exchange Service line.

On-Hook

The term "On-hook" denotes the idle condition of Switched Access or a Telephone Exchange Service line.

Open Circuit Test Line

The term "Open Circuit Test Line" denotes an arrangement which provides an ac open circuit termination of a trunk by means of an inductor.

Originating Direction

The term "Originating Direction" denotes the use of Access Service for the origination of calls from an End User Premises to a Customer Premises.

Pay Telephone

The term "Pay Telephone" denotes Exchange Telephone Company provided instruments and related facilities that are available to the general public for public convenience and necessity, including public and semi-public telephones, and coinless telephones.

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VIRTUAL EQUAL ACCESS SERVICE

2. General Regulations (Cont'd)

2.6 Definitions (Cont'd)

Phase Jitter

The term "Phase Jitter" denotes the unwanted phase variations of a signal.

Point of Interconnection

The term "Point of Interconnection" denotes the demarcation point or network interface on a KNAD premises between the Exchange Telephone Company facilities and KNAD's facilities.

Point of Termination

The term "Point of Termination" denotes the demarcation point or network interface on a KNAD premises at which KNAD's responsibility for the provision of Virtual Equal Access Service ends.

Premises

The term "Premises" denotes a building, or a portion of a building in a multi-tenant building, or buildings on continuous property (except Railroad Right-of-Way, etc.) not separated by a public highway.

Remote Switching Modules and/or Remote Switching Systems

The terms "Remote Switching Modules" and/or "Remote Switching Systems" denote small, remotely controlled electronic end office switches which obtain their call processing capability from an ESS-type Host Office. The Remote Switching Modules and/or Remote Switching Systems cannot accommodate direct trunks to a customer.

Return Loss

The term "Return Loss" denotes a measure of the similarity between the two (2) impedances at the junction of two (2) transmission paths. The higher the return loss, the higher the similarity.

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2. General Regulations (Cont'd)

2.6 Definitions (Cont'd)

Registered Equipment

The term "Registered Equipment" denotes the customer's premises equipment which complies with and has been approved within the Registration Provisions of part 68 of the F.C.C.'s Rules and Regulations.

Routing Exchange Carrier

The term "Routing Exchange Carrier" denotes the Exchange Telephone Company in whose exchange a customer's end users' end office is located and which routes calls to and from KNAD's facilities.

Service Access Code

The term (Service Access Code) denotes a three digit code in the NPA format which is used as the first three digits of a ten digit address and which is assigned for special network uses. Whereas NPA codes are normally used for identifying specific geographic areas, certain Service Access Codes have been allocated in the North American Numbering Plan to identify generic services or to provide access capability. Examples of Service Access Codes include the 800 and 900 codes.

Serving Wire Center

The term "Serving Wire Center" denotes the wire center from which the customer premises would normally obtain dial tone from an Exchange Telephone Company.

Seven Digit Manual Test Line

The term "Seven Digit Manual Test Line" denotes an arrangement which allows the customer to select balance, milliwatt and synchronous test lines by manually dialing a seven (7) digit number of the associated access connection.

Short Circuit Test Line

The term "Short Circuit Test Line" denotes an arrangement which provides for an ac short circuit termination of a trunk by means of a capacitor of at least four (4) microfarad.

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2. General Regulations (Cont'd)

2.6 Definitions (Cont'd)

Signal-to-C-Notched Noise Ratio

The term "Signal-to-C-Notched Noise Ratio" denotes the ratio in dB of a test signal to the corresponding C-Notched Noise.

Singing Return Loss

The term "Singing Return Loss" denotes the frequency weighted measure of return loss at the edges of the voiceband (200 to 500 Hz and 2500 to 3200 Hz), where singing (instability) problems are most likely to occur.

Subtending End Office of an Access Tandem

The term "Subtending End Office of an Access Tandem" denotes an end office that has final trunk group routing through that tandem.

Synchronous Test Line

The term "Synchronous Test Line" denotes an arrangement which performs marginal operational tests of supervisory and ring-tripping functions.

Terminating Direction

The term "Terminating Direction" denotes the use of Access Service for the completion of calls from a customer Premises to an End User Premises.

Transmission Measuring (105 Type) Test Line/Responder

The term "Transmission Measuring (105 Type) Test Line Responder" denotes an arrangement which provides far-end measurements to be made on trunks from a near end office.

Transmission Path

The term "Transmission Path" denotes an electrical path capable of transmitting signals within the range of the service offering, e.g., a voice grade transmission path is capable of transmitting voice frequencies within the approximate range of three hundred (300) to three thousand (3000) Hz. A transmission path is comprised of physical or derived channels consisting of any form or configuration of facilities plant typically used in the telecommunications industry.

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2. General Regulations (Cont'd)

2.6 Definitions (Cont'd)

Trunk

The term "Trunk" denotes a transmission path connecting two (2) switching systems in a network, used in the establishment of an end-to-end connection.

Trunk Group

The term "Trunk Group" denotes a set of trunks which are traffic engineered as a unit for the establishment of connections between switching systems in which all of the communications paths are interchangeable.

Trunk-Side Connection

The term "Trunk-Side Connection" denotes the connection of a transmission path to the trunk side of a switching system.

Two-Wire to Four-Wire Conversion

The term "Two-Wire to Four-Wire Conversion" denotes an arrangement which converts a four-wire transmission path to a two-wire transmission path to allow a four-wire facility to terminate in a two-wire entity (e.g., a Central office switch).

V and H Coordinates Method

The term "V and H Coordinates Method" denotes a method of computing airline miles between two points by utilizing an established formula which is based on the vert horizontal coordinates of the two points.

Wire Center

The term "Wire Center" denotes a building in which one or more Central offices, used for the provision of Telephone Exchange Services, are located.

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VIRTUAL EQUAL ACCESS SERVICE

5. Ordering Options for Switched Access Service

5.1 General

This section sets forth the regulations and other related charges for Access Orders for Switched Access Service. These charges are in addition to other applicable charges as set forth in other sections of this Tariff.

An Access Order is an order to provide the customer with Switched Access Service or to provide changes to existing services.

5.1.1 Ordering Conditions

Switched Access Service may be ordered from KNAD between the points of interconnection set forth in Section 8. following. A customer may order any number of services of the same type (e.g., Feature Group, Interface Group, etc.) between KNAD's central access tandem and a customer point of interconnection set forth in Section 8 following. Switched Access Service between a customer's premises and the points of interconnection set forth in Section 8. following is solely the responsibility of the customer and must be provided by the customer or ordered from another carrier. Switched Access Service from the points of Interconnection set forth in Section 8 following to an end office must be ordered from a Routing Exchange Carrier or other Exchange Telephone Company. KNAD will determine the Switched Transport facilities to be provided between a KNAD Network premises set forth in Section 8 following and KNAD's central access tandem on the basis of the capacity ordered. The customer shall supply all the necessary information to provide service, (e.g., customer name and point of interconnection location, customer and user contact and premises location, facility interface, etc.).

Orders for Feature Group A Switched Access Service shall be in lines. Orders for Feature Group D Switched Access Service between KNAD's central access tandem and the points of interconnection set forth in Section 8. following shall be in BHMCs or trunks.

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5. Ordering Options for Switched Access Service

5.1 General (Cont'd)

5.1.2 Provision of Other Services

(A) Testing Service, Additional Labor, Restoration Priority, and other services offered under the provisions of this tariff shall be ordered with an Access Order or as set forth in (B) following. The rates and charges for these services, as set forth in other sections of this tariff, will apply in addition to the ordering charges set forth in this section and the rates and charges for the Access Service with which they are associated.

(B) With the agreement of KNAD, the items listed in (A) preceding may subsequently be added to the order at any time, up to and including the service date for the Access Service. When added subsequently, charges for a design change as set forth in 5.2.2(C) following will apply when an engineering review is required.

(C) Additional Engineering is not an ordering option, but will be applied to an Access Order when KNAD determines Additional Engineering is necessary to accommodate a customer's request. When Additional Engineering is required, the customer will be so notified and will be furnished with a written statement setting forth the justification for the Additional Engineering as well as an estimate of the charges. If the customer agrees to the Additional Engineering, a firm order will be established. If the customer does not want the service or facilities after being notified that Additional Engineering is required, the order will be withdrawn and no charges will apply. Once a firm order has been established, the total charge to the customer for the Additional Engineering may not exceed the estimated amount by more than 10%.

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VIRTUAL EQUAL ACCESS SERVICE

5. Ordering Options for Switched Access Service

5.1 General (Cont'd)

5.1.2 Provision of Other Services (Cont'd)

(C) (Cont'd)

The regulations, rates and charges for Additional Engineering are as set forth in 13.1 following and are in addition to the regulations, rates and charges specified in this section.

5.1.3 Reserved for Future Use.

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5. Ordering Options for Switched Access Service (Cont'd)

5.2 Access Order

An Access Order is used by KNAD to provide to a customer Access Service as follows:

- Switched Access Services as set forth in Section 6. following.
- Other Services as set forth in Section 5.1.2 preceding.

When placing an order for Access Service, the customer shall provided, at the minimum, the following information:

- For Feature Group A Switched Access Service, the customer shall specify the number of lines and the first point of switching (i.e., dial tone office), the Local Transport options and Local Switching options desired. In addition, the customer shall specify whether the ordered line(s) is for FX/ONAL service or MTS/WATS type service. If the customer specifies MTS/WATS type service, it shall also specify which lines are to be arranged in multiline hunt group arrangements and which lines are to be provided as single lines.

(D)

(D)

- For Feature Group D Switched Access Service, the customer shall specify the number of busy hour minutes of capacity (BHMC) or trunks needed to carry traffic from the end office of a Routing Exchange carrier set forth in Section 9. following to KNAD's central access tandem by type of BHMC and Local Transport options and Local Switching options desired. This information is used to determine the number of transmission paths as set forth in 6.5.5 following. The basic traffic type must also be specified using the same categories as described in 6.1.1 following, to enable efficient provisioning and billing functions.

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5. Ordering Options for Switched Access Service (Cont'd)

5.2 Access Order (Cont'd)

- For Interim NXX Translation, the customer must place an order with the company who provides the Interim NXX Translation. If the order is placed with KNAD, the customer must also provide a copy of the order to the Exchange Telephone Companies involved in providing the Interim NXX Translation. The minimum territory for which KNAD will provide Interim NXX Translation is all the appropriately equipped offices of the Routing Exchange Carriers set forth in Section 9. following for which the customer has ordered Interim NXX Translation. Additionally, when new NXX(s) are to be opened up, or when such existing NXX(s) are to be deleted, coincident with the provision of Interim NXX Translation, the customer shall provide such information when placing the order for Interim NXX Translation. For additions and/or deletions of NXX(s) at any other time, the customer shall place an order for such additions and/or deletions. The NXX codes are assigned to specific customers in conformance with the North American Numbering Plan (NANP). NXX code assignment(s) will be made by the Bellcore NANP Coordinator. KNAD will use the NXX code to identify the customer to whose point of termination the traffic is to be delivered. It is then the responsibility of the customer to do any further translation the customer deems necessary to route the call. Customer assigned NXX codes which have not been ordered will be blocked.

  The customer must supply a copy of the order to each carrier involved in providing the access service.

  The BHMC may be determined by the customer in the following manner. For each average business day (i.e., 8 A.M. to 11 P.M., Monday through Friday, excluding national holidays), the customer shall

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5. Ordering Options for Switched Access Service (Cont'd)

5.2 Access Order (Cont'd)

determine the highest number of minutes of use for a single hour (e.g., 55 minutes in the 10-11 A.M. hour). The customer shall, for the same hour period (i.e., busy hour) for each of twenty (20) consecutive business days, pick the twenty (20) consecutive business days in a calendar year which add up to the largest number of minutes of use. Both originating and terminating minutes shall be included. The customer shall then determine the average busy hour minutes of capacity (i.e., BHMC) by dividing the largest number of minutes of use figure for the same hour period for the consecutive twenty (20) business day period by twenty (20). This computation shall be performed for each end office the customer wishes to serve. These determinations thus establish the forecasted BHMC for each end office.

5.2.1 Access Order Service Date Intervals

Access Service is provided with one of the following Service Date Intervals:

- Standard Interval
- Negotiated Interval

Whether the customer's service is subject to standard or negotiated intervals, KNAD will provide service interval tables and any associated relevant information to all customers within a reasonable time after a request.

To the extent the Access Service can be made available with reasonable effort, KNAD will provide the Access Service in accordance with the customer's requested interval, subject to the following conditions:

(A) Standard Interval

The day upon which the customer has provided to KNAD a firm commitment

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5. Ordering Options for Switched Access Service (Cont'd)

5.2 Access Order (Cont'd)

5.2.1 Access Order Service Date Intervals (Cont'd)

(A) Standard Interval (Cont'd)

for the service and sufficient information to allow for the processing of the Access Order is the Application Date. On the Application Date, KNAD will establish a Service Date. The Service Date is the date on which service is to be made available to the customer. The time required to provision the service (i.e., the interval between the Application Date and the Service Date) is known as the service interval. Standard interval tables and associated information will be provided to customers upon request within a reasonable period of time.

Access Services provided in a Standard Interval will be installed during normally scheduled work hours. If a customer requests that installation be done outside of scheduled work hours, and KNAD agrees to this request, the customer will be subject to applicable Additional Labor Charges as set forth in 13.2.6(A) following.

(B) Negotiated Interval

The customer may request a service date other than that established pursuant to the standard order service interval guidelines, and KNAD, where possible, will establish a negotiated order service date in accordance with such request. KNAD will negotiate a service date interval with the customer when:

(1) There is no Standard Interval for the service, or

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5. Ordering Options for Switched Access Service (Cont'd)

5.2 Access Order (Cont'd)

5.2.1 Access Order Service Date Intervals (Cont'd)

(B) Negotiated Interval (Cont'd)

(2) The customer requests a service date before or beyond the applicable Standard Interval Service date, or

(3) The quantity of Access Services ordered exceeds the quantities specified in the Standard Intervals. KNAD will offer a service date based on the type and quantity of Access Services customer has requested. The Negotiated Interval may not exceed by more than six (6) months the Standard Interval Service date, or, when there is no Standard Interval, the KNAD offered service date. All services for which rates are applied on an individual case basis are provided with a Negotiated Interval.

5.2.2 Access Order Modifications

(A) Service Date Change Charge (Cont'd)

An Access Order may be modified by the customer prior to the service date as set forth following. One or more of the following charges will apply when such modifications are undertaken. When modifications are undertaken, the service date will be changed if necessary to complete the requested modifications with the normal work force assigned to complete such an order in normal work hours. All charges for Access Order modifications will apply on a per occurrence basis.

Any increase in the number of busy hours minutes of capacity will be treated as a new Access Order (for the increased amount

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5. Ordering Options for Switched Access Service (Cont'd)

5.2 Access Order (Cont'd)

5.2.2 Access Order Modifications (Cont'd)

(A) Service Date Change Charge (Cont'd)

only). Access Order service dates may be changed, but the new service date may not exceed the original service date by more than thirty (30) calendar days. When, for any reason, the customer indicates that service cannot be accepted for a period not to exceed thirty (30) calendar days, and KNAD accordingly delays the start of service, a Service Date Change Charge will apply. If the customer requested service date is more than thirty (30) calendar days after the original service date, the order will be cancelled by KNAD and reissue with the appropriate cancellation charges applied unless the customer indicates that billing for the service is to commence as set forth in 5.2.3(A) following. If KNAD determines it can accommodate the customer's request without delaying service dates for orders of other customers, a new service date may be established that is prior to the original standard or negotiated interval service date.

If the service date is changed to an earlier date, and KNAD determines additional labor or extraordinary costs are necessary to meet the earlier service date requested by the customer, the customer will be notified by KNAD that Expedited Order Charges as set forth in (D) following apply. Such charges will apply in addition to the Service Date Change Charge. A Service Date Change Charge will apply, on a per order per occurrence basis, for each service date changed. The applicable charge is:

	Charge
Service Date Change Charge, per order	$25.00

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5. Ordering Options for Switched Access Service (Cont'd)

5.2 Access Order (Cont'd)

5.2.2 Access Order Modifications (Cont'd)

(B) Partial Cancellation Charge

Any decrease in the number of ordered busy hours minutes of capacity will be treated as set forth in 5.2.3(B) following.

(C) Design Change Charge

The customer may request a design change to the service ordered. A design change is any change to an Access Order which requires engineering review. An engineering review is a review by KNAD personnel, of the service ordered and the requested changes to determine what changes in the design, if any, are necessary to meet the changes requested by the customer. Design changes include such things as the addition or deletion of optional features or functions or a change in the type of channel interface, type of Interface Group technical specifications package. Design changes do not include a change of customer point of interconnection, end office switch, or Feature Group type. Changes of this nature will require the issuance of a new order and the cancellation of the original order with appropriate cancellation charges applied. KNAD will review the requested change, notify the customer whether the change is a design change, if it can be accommodated and if a new service date is required. If the customer authorizes KNAD to proceed with the design change, a Design Change

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5. Ordering Options for Switched Access Service (Cont'd)

5.2 Access Order (Cont'd)

5.2.2 Access Order Modifications (Cont'd)

(C) Design Change Charge (Cont'd)

Charge will apply in addition to the charge for Additional Engineering as set forth in 13.1 following. If a change of a service date is required, the Service Date Change Charge as set forth in (A) preceding will apply. The Design Change Charge will apply on a per order per occurrence basis, for each order requiring a design change. The applicable charge is:

	Rate
Design Change Charge, per order	$72.00

(D) Expedited Order Charge

When placing an Access Order, a customer may request a service date that is prior to the standard interval service date. A customer may also request an earlier service date on a pending standard or negotiated interval Access Order. If KNAD determines that service can be provided on the requested date and that additional labor cost are required to meet the requested service date, the customer will be notified and will be provided with an estimate of the additional charges involved. Charges will be billed at actual cost, not to exceed 10 percent over estimated charges. Such additional charges will be determined and billed to the customer as follows: To calculate the additional labor charges, KNAD will, upon authorization from the customer to incur the additional labor charges, keep track of the additional labor hours used to meet the request of the customer and will bill the customer at the

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5. Ordering Options for Switched Access Service (Cont'd)

5.2 Access Order (Cont'd)

5.2.2 Access Order Modifications (Cont'd)

(D) Expedited Order Charge (Cont'd)

applicable Additional Labor charges as set forth in 13.2.6(A) following.

When the request for expediting occurs subsequent to the issuance of the Access Order, a Service Date Change Charge as set forth in (A) preceding also applies.

5.2.3 Cancellation of an Access Order

(A) A customer may cancel an Access Order for the installation of service on any date prior to the service date. The cancellation date is the date KNAD receives written or verbal notice from the customer that the order is to be cancelled. The verbal notice must be followed by written confirmation within ten (10) days. If a customer is unable to accept Access Service within thirty (30) calendar days of the original service date, the customer has the choice of the following options:

- The Access Order shall be cancelled and the charges set forth in (B) following will apply, or

- Billing for the service will commence.

If no cancellation request is received within the specified thirty (30) calendar days, billing for the service will commence.

In such instances, the cancellation date or the billing date, depending on which option is selected by the customer, shall be the thirty-first (31st) day beyond the original service date of the Access Order.

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5. Ordering Options for Switched Access Service (Cont'd)

5.2 Access Order (Cont'd)

5.2.3 Cancellation of an Access Order (Cont'd)

(B) When a customer cancels an Access Order for the installation of service, a Cancellation Charge will apply as follows:

(1) Installation of Switched Access Service facilities is considered to have started when KNAD incurs any cost in connection therewith or in preparation thereof which would not otherwise have been incurred.

(2) Where the customer cancels an Access Order prior to the start of installation of access facilities, no charges shall apply.

(3) Where installation of access facilities has been started prior to the cancellation, the charges specified in (a) or (b) following, whichever is lower, shall apply.

(a) A charge equal to the costs incurred in such installation, less estimated net salvage. Such charge is determined as detailed in (4) following.

(b) The charge for the minimum period of Switched Access Service ordered by the customer.

(4) Charges applicable as specified in (3)(a) preceding include the nonrecoverable cost of equipment and material ordered, provided or used, plus the nonrecoverable cost of installation and removal including the costs of engineering, labor, supervision, transportation, rights-of-way and other associated costs.

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5. Ordering Options for Switched Access Service (Cont'd)

5.2 Access Order (Cont'd)

5.2.3 Cancellation of an Access Order (Cont'd)

(C) When a customer cancels an order for the discontinuance of service, no charges apply for the cancellation.

(D) If KNAD misses a service date by more than thirty (30) days due to circumstances over which it has direct control (excluding, e.g., acts of God, governmental requirements, work stoppages and civil commotions), the customer may cancel the Access Order without incurring cancellation charges.

5.2.4 Selection of Facilities for Access Orders

(A) For all Access Orders, the option to request a specific transmission path is not provided.

5.2.5 Minimum Period

(A) The minimum period for which Access Service is provided and for which charges are applicable, is one (1) month.

(B) Administrative Changes as set forth in 6.7.1(C) following for Switched Access Service may be made without a change in minimum period requirements.

(C) Changes other than those identified in 6.7.1(C) following will be treated as a discontinuance of the existing service and an installation of a new service. All associated nonrecurring charges will apply for the new service. A new minimum period will be established for the new service. The customer will also remain responsible for all outstanding minimum period obligations associated with the disconnected service.

The changes listed below are those which will be treated as a discontinuance and installation of service and for which a new minimum period will be established.

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5. Ordering Options for Switched Access Service (Cont'd)

5.2 Access Order (Cont'd)

5.2.5 Minimum Period (Cont'd)

(C) (Cont'd)

(1) A change in type of service (i.e., one type of Switched Access Feature Group to another except as set forth in 6.7.5 following).

5.2.6 Minimum Period Charges

When Access Service is disconnected prior to the expiration of the minimum period, charges are applicable for the balance of the minimum period. A disconnect constitutes facilities being returned to available inventory. The Minimum Period Charge for monthly billed services will be determined as follows:

(A) For Switched Access Service, the charge for a month or fraction thereof is equal to the applicable recurring charges plus any nonrecurring charges(s) that may be due.

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5. Ordering Options for Switched Access Service (Cont'd)

5.3 Available Inventory

Available inventory is limited and does not include facilities used to provide working services or facilities previously ordered, reserved for pending orders or held as maintenance spare. Available inventory is the KNAD facilities (e.g., loop pairs, interoffice pairs, carrier channels, circuit equipment, trunk equipment, and switching equipment) in place, when the customer places an order, or under construction to be ready to meet future customer orders. The available date for facilities under construction is the date such facility construction is completed, including line up and testing, and made available to meet customer needs. KNAD will make every reasonable effort to maintain sufficient available inventory to provide Virtual Equal Access Service in accordance with customers' requested service date intervals. To the extent that service can be provided, Access Orders will be satisfied from available inventory.

5.4 Access Orders for Services Provided by KNAD and Exchange Telephone Companies

(A) Access Services provided by KNAD and Exchange Telephone Companies are services where one end of the Transport element is in the operating territory of an Exchange Telephone Company and KNAD provides a portion of the Transport element between two or more of the points of interconnection listed in Section 8. following or where the Interim NXX Translation Service is provided by KNAD. KNAD will coordinate and arrange for the provision of the services ordered. In addition to the Switched Access rate billed by KNAD as set forth in Section 6. following, each Exchange Telephone Company will provide the portion of the Transport element in its operating territory and will bill its charges in accordance with its tariff.

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5. Ordering Options for Switched Access Service (Cont'd)

5.4 Access Orders for Services Provided by KNAD and Exchange Telephone Companies (Cont'd)

(A) (Cont'd)

(1) When Switched Access Services are ordered to KNAD's central access tandem, the customer will place the order with KNAD. The customer must also supply a copy of the order to each Exchange Telephone Company involved in providing the service and subtending KNAD's central access tandem.

(2) When Switched Access Services are ordered to a point of termination listed in Section 8 following other than KNAD's central access tandem, the customer will place the order as follows:

(D)

(D)

(b) For Feature Groups A and D Switched Access Service, the customer must place the order with the Exchange Telephone Company in whose territory the end office is located. The customer must also supply a copy of the order to KNAD.

(3) For the Switched Access Services ordered set forth in (1) and (2) preceding, the customer must also supply a copy of the order to the Exchange Telephone Company in whose operating territory a customer premises is located and any other Exchange Telephone Company involved in providing the service.

(4) For initiation, additions, changes or deletions to the Interim NXX Translation code(s), the customer must place an order with the carrier who provides the Interim NXX Translation. The customer must also provide a copy of the order to the Exchange Telephone Companies subtending the Interim NXX Translation office.

VIRTUAL EQUAL ACCESS SERVICE

5. Ordering Options for Switched Access Service (Cont'd)

5.4 Access Orders for Services Provided by KNAD and Exchange Telephone Companies (Cont'd)

(A) (Cont'd)

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5. Ordering Options for Switched Access Service (Cont'd)

5.4 Access Orders for Services Provided by KNAD and Exchange Telephone Companies (Cont'd)

(A) (Cont'd)

(6) When Feature Group D is ordered with the Interim NXX Translation optional feature, the customer shall specify the Service Access Codes(s) (e.g., 800 or 900) and their associated NXX Code(s) to be translated. The initial and subsequent orders to add, change, or delete Interim NXX Translation codes shall be placed separately or in combination with orders to change Feature Group D Switched Access BHMC. Customer assigned NXX codes which have not been ordered will be blocked.

Orders for the Interim NXX Translation optional feature shall not be required until such time as a customer other than an MTS/WATS provider requests Interim NXX Translation of Service Access Codes. Upon receipt of such order, KNAD shall notify the MTS/WATS provider of the activation of the Interim NXX Translation Service for the Service Access Code. Following such initial activation, all customers are required to place orders for Interim NXX Translation of the Service Access Code.

VIRTUAL EQUAL ACCESS SERVICE

6. Switched Access Service

6.1 General

Switched Access Service, when combined with the services offered by Exchange Telephone Companies, is available to customers. KNAD provides a two-point communications path between a point of interconnection with the transmission facilities of an Exchange Telephone Company at a location listed in Section 8. following and KNAD's central access tandem where the customer's traffic is switched to originate or terminate its communications. It also provides for the switching facilities at KNAD's central access tandem. KNAD's central access tandem is KNAD's switching system located in Moundridge, Kansas, that provides a concentration and distribution function for originating and terminating traffic between the end offices of Routing Exchange Carriers listed in Section 9. following and a customer's point of interconnection set forth in Section 8. following. The customer's point of interconnection is the demarcation point or network interface between KNAD's communications facilities and customer provided facilities.

Rates and charges for Switched Access Service are set forth in 6.8 following. The application of rates for Switched Access Service is described in 6.7 following.

6.1.1 Feature Group Arrangements and Manner of Provision

Switched Access Service is provided in two service categories called Feature Groups. These are differentiated by their technical characteristics and the manner in which an end user accesses them to originate a call, e.g., with or without an access code. In addition, Interim NXX Translation is provided in conjunction with Feature Group D Switched Access Service. Following is a brief description of each Feature Group arrangement and the Interim NXX Translation optional feature.

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6. Switched Access Service (Cont'd)

6.1 General (Cont'd)

6.1.1 Feature Group Arrangements and Manner of Provision (Cont'd)

(B) Feature Group A (FGA)

FGA Access, which is available to all customers, provides line side access to KNAD's end office switches with an associated seven digit local telephone number for the customer's use in originating communications from and terminating communications to an Interexchange Carrier's Interstate Service or a customer - provided interstate communications capability. The customer must specify the Interexchange Carrier to which the FGA service is connected or, in the alternative, specify the means by which the FGA access communications is transported to another state.

(C) (D)

(D)

(D) Feature Group D (FGD)

FGD Access, which is available to all customers, provides trunk side access at a customer's point of interconnection with an associated uniform 10XXX access code for the customer's use in originating and terminating communications unless a Routing Exchange Carrier's end office is unable to provide a uniform 10XXX code.

(E) Reserved for Future Use.

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6. Switched Access Service (Cont'd)

6.1 General (Cont'd)

6.1.1 Feature Group Arrangements and Manner of Provision (Cont'd)

(F) Interim NXX Translation

The Interim NXX Translation optional feature is an originating offering utilizing trunk side Switched Access Service and provides a customer identification function based on the dialed SAC and NXX code. For example, when a 1+800+NXX-XXXX or a 1+900+NXX-XXXX call is originated by an end user, KNAD or a Routing Exchange Carrier will perform the customer identification function based on the dialed digits to determine the customer location to which the call is to be routed. If the call originates from an end office switch not equipped to provide the customer identification function, the call will be routed to KNAD's central access tandem. Once customer identification has been established, the call will be routed to the customer. Calls originating from an end office switch at which the customer identification function is performed, but to which the customer has not ordered Interim NXX Translation, will be blocked. Calls to a 900 number from coin telephones, 0+, 0-, 10XXX, Inmate Service, Hotel/Motel Service and calling card calls will be blocked. The charge for Interim NXX Translation is as set forth in Section 6.8.1(C) following.

(G) Manner of Provision

Switched Access is furnished with quantities of lines or trunks or in busy hour minutes of capacity (BHMCs). KNAD will determine the Switched Transport facilities to be provided on the basis of the busy hour minutes of capacity ordered as set forth in 5.2 preceding. Switched Access is furnished in trunks between the customer's premises and the points of interconnection set forth in Section 8. following. BHMCs are differentiated by type and directionality of traffic carried over a Switched Access Service arrangement. Differentiation of traffic among

VIRTUAL EQUAL ACCESS SERVICE

6. Switched Access Service (Cont'd)

6.1 General (Cont'd)

6.1.1 Feature Group Arrangements and Manner of Provision (Cont'd)

(G) (Cont'd)

BHMC types is necessary for KNAD to properly design Switched Access Service to meet the traffic carrying capacity requirement of the customer. There are two major BHMC categories identified as: Originating and Terminating. Originating BHMCs represent access capacity for carrying traffic from the end user to KNAD's central access tandem. Terminating BHMCs represent access capacity for carrying traffic from KNAD's central access tandem to the end user. When ordering capacity for Switched Access Service, the customer must at a minimum specify such access capacity in terms of Originating BHMCs and Terminating BHMCs.

Because some customers will wish to further segregate their originating traffic into separate trunk groups, Originating BHMCs are further categorized into Domestic, 700, 800, 900, and IDDD. Domestic BHMCs represent access capacity for carrying only domestic traffic other than 700, 800 and 900 traffic; IDDD BHMCs represent access capacity for carrying only international traffic; and 700, 800 and 900 BHMCs represent access capacity for carrying, respectively, only 700, 800 and 900 traffic. When ordering such types of access capacity, the customer must specify Domestic, 700, 800, 900 or IDDD BHMCs.

6.1.2 Reserved for Future Use.

VIRTUAL EQUAL ACCESS SERVICE

6. Switched Access Service (Cont'd)

6.1 General (Cont'd)

6.1.3 Rate Categories

The rate categories which apply to the provision of Switched Access Service in conjunction with Virtual Equal Access Service:

- Switched Access (described in 6.1.3(A) following)

- Access Transport (described 6.1.3(B) following)

- Chargeable Optional Features (described in 6.1.3(C) following)

The following diagram depicts a generic view of how Virtual Equal Access Service is combined with the service of the Routing Exchange Carriers set forth in Section 9. following to provide a complete Switched Access Service.

AT - Access Tandem	EO - End Office
CL - Carrier Common Line	LT - Local Transport
POI - KNAD Point of Interconnection	VEA - Virtual Equal Access
POT - Customer's Point of Termination	KAT - KNAD's Access Tandem

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6. Switched Access Service (Cont'd)

6.1 General (Cont'd)

6.1.3 Rate Categories (Cont'd)

(A) Switched Access

The Switched Access rate element also provides the virtual switching functions necessary to complete the transmission of Switched Access communications to and from KNAD's central access tandem. International dialing may be provided as a capability associated with Feature Group D. International dialing provides the capability of switching international calls with service prefix and address codes having more digits than are capable of being switched through standard FGD equipment.

Switched Access is assessed on a per access minute basis at the rate set forth in 6.8.1 following.

(1) Interface Groups

All Interface Groups are provided with Data Transmission Parameters as stated in 15.2.1.

Only certain interfaces are available at the customer's point of interconnection. The various interfaces which are available are set forth in Section 15.1 following.

(2) Nonchargeable Optional Features

Where transmission facilities permit, KNAD will, at the option of the customer, provide the following nonchargeable optional features in association with Switched Access.

(a) Supervisory Signaling

Where the transmission parameters permit, and where signaling conversion is required by the customer to meet its signaling capability, the customer may order an optional supervisory signaling arrangement for each transmission path provided as follows:

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6. Switched Access Service (Cont'd)

6.1 General (Cont'd)

6.1.3 Rate Categories (Cont'd)

(A) Switched Access (Cont'd)

(2) Nonchargeable Optional Features (Cont'd)

(a) Supervisory Signaling (Cont'd)

Interface Group 6 may, at the option of the customer, be provided with individual transmission path SF supervisory signaling where such signaling is available in KNAD's central access tandem. Generally, such signaling is available only where KNAD's central access tandem provides an analog, i.e., non-digital, interface and a a portion of the facility provided by the customer between KNAD's central access tandem and the customer's premises is analog.

(b) (D)

(D)

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6. Switched Access Service (Cont'd)

6.1 General (Cont'd)

6.1.3 Rate Categories (Cont'd)

(B) Access Transport

Access Transport includes High Capacity (1.544 Mbps) frequency transmission path composed of facilities determined by KNAD. The two-way frequency transmission path permits the transport of calls from KNAD's central access tandem to a KNAD's premises listed in Section 8 following and from such KNAD Premises to KNAD's central access tandem.

Access Transport is provided by KNAD at a customer's point of interconnection. A customer's point of interconnection may be located at KNAD's central access tandem or another KNAD premises as set forth in Section 8. following.

When a customer's point of interconnection is located at KNAD's central access tandem, the Access Transport rate applies per access minute for transporting a customer's call between a customer's point of interconnection at KNAD's central access tandem and another KNAD premise listed in Section 8 following.

When a customer's point of interconnection is located at a KNAD premise listed in Section 8. following other than Moundridge, the Access Transport rate applies per access minute for transporting the customer's call in the terminating direction from KNAD's central access tandem back to the same or a different KNAD premises listed in Section 8. following with no adjustment for any mileage between KNAD's central access tandem and a different KNAD premise listed in Section 8. following.

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6. Switched Access Service (Cont'd)

6.1 General (Cont'd)

6.1.3 Rate Categories (Cont'd)

(C) Chargeable Optional Features

Where facilities permit, KNAD will, at the option of the customer provide the following chargeable optional features.

(1) Interim NXX Translation

The Interim NXX Translation rate element provides for customer identification when calls are directed by end users in the 1+SAC+NXX+XXXX (e.g., 1-800-NXX-XXXX) format. The NXX codes are assigned to specific customers in conformance with the North American Numbering Plan (NANP). NXX code assignment(s) will be made by the Bellcore NANP Coordinator. KNAD will use the NXX code to identify the customer to whose point of termination the traffic is to be delivered (i.e., at appropriately equipped electronic end offices or access tandems). It is then the responsibility of the customer to do any further translation the customer deems necessary to route the call. Customer assigned NXX codes which have not been ordered will be blocked. A nonrecurring charge, as set forth in 6.8.1(C) following is associated with this optional feature. The nonrecurring charge is assessed only by a company that provides the final translation function. A company is said to have provided the final Interim NXX Translation when its translation identifies the customer's traffic and this traffic is then delivered to the customer's point of termination without any further translation. The description and application of this charge is as set forth in 6.7.1(B) following.

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6. Switched Access Service (Cont'd)

6.1 General (Cont'd)

6.1.4 Design Layout Report

At the request of the customer, KNAD will provide to the customer the makeup of the facilities and services provided. This information will be provided in the form of a Design Layout Report. The Design Layout Report will be provided to the customer at no charge, and will be reissued or updated whenever these facilities are materially changed.

6.1.5 Acceptance Testing

At no additional charge, KNAD will, at the customer's request, cooperatively test, at the time service is initiated, the following parameters: loss, C-notched noise, C-message noise, 3-tone slope, d.c. continuity and operational signaling.

6.1.6 Routine Testing

At no additional charge, KNAD will, at the customer's request, test after installation on an automatic or manual basis, 1004 Hz loss, C-message noise and Balance (Return Loss). In the case of automatic testing, the customer

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6. Switched Access Service (Cont'd)

6.1 General (Cont'd)

6.1.6 Routine Testing (Cont'd)

shall provide remote office test lines and 105 test lines with associated responders or their functional equivalent.

The frequency of these tests will be that which is mutually agreed upon by the customer and KNAD, but shall consist of not less than quarterly 1004 Hz Loss and C-message noise tests and an annual Balance test. Trunk test failures requiring customer participation for trouble resolution will be provided to the customer on an as-occurs basis.

Additional tests may be ordered as set forth in 13.3.4 following. Charges for these additional tests are set forth in 13.3.4(C) following.

6.1.7 Ordering Options and Conditions

Switched Access Service is ordered under the Access Order provisions set forth in Section 5 preceding. Also, included in that section are other charges which may be associated with ordering Switched Access Service (e.g., Service Date Change Charges, Cancellation Charges, etc.).

6.2 Provision and Description of Switched Access Service Feature Groups

Switched Access Service is provided in two different Feature Group arrangements. The provision of each Feature Group requires Switched Transport facilities. Interim NXX Translation is provided in conjunction with Feature Group D.

There are two (2) specific transmission performances (i.e., Types A and B) that have been identified for the provision of Feature Groups. The parameters for the transmission specifications are set forth in 6.4.1 following and Section 15.2.1.

Feature Groups are arranged with Virtual Equal Access Service for one-way or two-way calling. Originating

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6. Switched Access Service (Cont'd)

6.2 Provision and Description of Switched Access Service Feature Groups (Cont'd)

calling permits the delivery of calls from Telephone Exchange Service locations to the customer premises. Terminating calling permits the delivery of calls from the customer premises to Telephone Exchange Service locations. Two-way calling permits the delivery of calls in both directions, but not simultaneously.

Following are detailed descriptions of each of the available Feature Groups. Each Feature Group is described in terms of its specific physical characteristics and calling patterns, the transmission specifications with which it is provided, and the standard testing capabilities.

6.2.1 Feature Group A (FGA)

(A) Description

(1) FGA provides a line side termination at the first point of switching (KNAD access tandem). The line side termination will be provided with either ground start supervisory signaling or loop start supervisory signaling. The type of signaling is at the option of the customer.

(2) KNAD shall select the first point of switching, within the selected LATA, at which the line side termination is to be provided unless the customer requests a different first point of switching and KNAD's facilities and measurement capabilities, where necessary, are available to accommodate such a request.

(3) A seven digit local telephone number assigned by the Routing Exchange Carrier is provided for access to FGA switching in the originating direction. The seven digit local telephone number will be associated with the selected end office switch and is of the form NXX-XXXX.

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6. Switched Access Service (Cont'd)

6.2 Provision and Description of Switched Access Service Feature Groups (Cont'd)

6.2.1 Feature Group A (FGA)

(A) Description (Cont'd)

(3) (Cont'd)

If the customer requests a specific seven digit telephone number that is not currently assigned, and the Routing Exchange Carrier can, with reasonable effort, comply with that request, the requested number will be assigned to the customer.

(4) FGA switching, when used in the terminating direction, is arranged with dial tone start-dial signaling. When used in the terminating direction FGA switching may, at the option of the customer, be arranged for dial pulse or dual tone multi-frequency address signaling, subject to availability of equipment at the first point of switching. When FGA switching is provided in a hunt group or uniform call distribution arrangement, all FGA switching will be arranged for the same type of address signaling.

(5) No address signaling is provided by KNAD when FGA Switching is used in the originating direction. Address signaling in such cases, if required by the customer, must be provided by the customer's end user using inband tone signaling techniques. Such inband tone address signals will not be regenerated by KNAD and will be subject to the ordinary transmission capabilities of the Local Transport provided.

(6) FGA switching, when used in the terminating direction, may be used to access valid NXXs in the LATA, local operator service (O- and 0+), Directory Assistance (411 where available and 555-1212), emergency reporting service (911 where available), exchange telephone repair (611 where available), time or weather

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6. Switched Access Service (Cont'd)

6.2 Provision and Description of Switched Access Service Feature Groups (Cont'd)

6.2.1 Feature Group A (FGA) (Cont'd)

(A) Description (Cont'd)

(6) (Cont'd)

announcement services of KNAD, community information services of an information service provider, and other customers' services (by dialing the appropriate digits). Charges for FGA terminating calls requiring operator assistance or calls to 611 or 911 will only apply where sufficient call details are available. These services are provided by KNAD where they are otherwise unavailable from the exchange carrier.

(7) When a FGA switching arrangement for an individual customer (a single line or entire hunt group) is discontinued at an end office, an intercept announcement is provided. This arrangement provides for a limited period of time, an announcement that the service associated with the number dialed has been disconnected. This arrangement is provided by KNAD where it is otherwise unavailable from the exchange carrier.

(B) Optional Features

The following optional features are provided by KNAD where they are otherwise unavailable from the exchange carrier:

(1) Common Switching Optional Features

(a) Hunt Group Arrangement
(b) Uniform Call Distribution Arrangement
(c) Nonhunting Number for use with Hunt Group Arrangement or Uniform Call Distribution
(d) Call Denial
(e) Service Code Denial

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6. Switched Access Service (Cont'd)

6.2 Provision and Description of Switched Access Service Feature Groups (Cont'd)

6.2.1 Feature Group A (FGA) (Cont'd)

(B) Optional Features (Cont'd)

(1) Common Switching Optional Features (Cont'd)

(f) Nonhunting Number for use with Hunt Group Arrangement or Uniform Call Distribution Arrangement for Use with Special Access Service utilized in the provision of WATS-type services

(g) Band Advance Arrangement for Use with Special Access Service utilized in the provision of WATS-type Services

(h) Centrex

(i) ISDN

(j) Switched T-1

(k) Bandwidth Switching

(2) Transport Termination Optional Features

(a) Two-way operation with dial pulse address signaling and loop start supervisory signaling

(b) Two-way operation with dial pulse address signaling and ground start supervisory signaling

(c) Two-way operation with dual tone multi-frequency address signaling and loop start supervisory signaling

(d) Two-way operation with dual tone multi-frequency address signaling and ground start supervisory signaling

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6. Switched Access Service (Cont'd)

6.2 Provision and Description of Switched Access Service Feature Groups (Cont'd)

6.2.1 Feature Group A (FGA) (Cont'd)

(B) Optional Features (Cont'd)

(2) Transport Termination Optional Features (Cont'd)

(e) Terminating operation with dial pulse address signaling and loop start supervisory signaling

(f) Terminating operation with dial pulse address signaling and ground start supervisory signaling

(g) Terminating operation with dual tone multifrequency address signaling and loop start supervisory signaling

(h) Terminating operation with dual tone multifrequency address signaling and ground start supervisory signaling

(i) Originating operation with loop start supervisory signaling

(j) Originating operation with ground start supervisory signaling

(C) Transmission Specifications

FGA is provided with either Type B or Type C Transmission Specifications. The specifications for the associated parameters are guaranteed to the first point of switching. Type C Transmission Specifications are provided with Interface Group 1 and Type B is provided with Interface Groups 2 through 10. Type DB Data Transmission Parameters are provided with FGA to the first point of switching.

(D) FGA is provided, in the terminating direction where equipment is available, with seven digit access to balance (100 type) test line and milliwatt (102 type) test line. In addition to the tests described

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6. Switched Access Service (Cont'd)

6.2 Provision and Description of Switched Access Service Feature Groups (Cont'd)

6.2.1 Feature Group A (FGA) (Cont'd)

(D) (Cont'd)

in 6.1.6 preceding which are included with the installation of service and as ongoing routine testing, Additional Cooperative Acceptance Testing and Additional Manual Testing are available as set forth in 13.3.5 following.

6.2.2 Reserved for Future Use

(D)

(D)

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6. Switched Access Service (Cont'd)

6.2 Provision and Descrition of Switched Access Service Feature Groups (Cont'd)

6.2.2 Reserved for Future Use

(D)

(D)

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6. Switched Access Service (Cont'd)

6.2 Provision and Description of Switched Access Service Feature Groups (Cont'd)

6.2.2 Feature Group B (FGB) (Cont'd)

(B) Transmission Specifications

FGB is provided with Type B Transmission Specifications. The specifications for the associated parameters are guaranteed to the end office when routed directly or to the first point of switching when routed via an access tandem. Type DB Data Transmission Parameters are provided with FGB to KNAD's central access tandem.

(C) Testing Capabilities

FGB is provided, in the terminating direction where equipment is available, with seven digit access to balance (100 type) test line, milliwatt (102 type) test line, nonsynchronous or synchronous test line, automatic transmission measuring (105 type) test line, loop around test line, short circuit test line and open circuit test line. In addition to the tests described in 6.1.5 preceding which are included with the installation of service, Additional Cooperative Acceptance Testing and Additional Automatic Testing will be provided as set forth in 13.3.4 following.

6.2.3 Reserved for Future Use.

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6. Switched Access Service (Cont'd)

6.2 Provision and Description of Switched Access Service Feature Groups (Cont'd)

6.2.4 Reserved for Future Use.

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6. Switched Access Service (Cont'd)

6.2 Provision and Description of Switched Access Service Feature Groups (Cont'd)

6.2.5 Feature Group D (FGD)

(A) Description

(1) FGD is provided at KNAD's central access tandem.

(2) FGD is provided as trunk side switching through the use of access tandem switch trunk equipment at KNAD's central access tandem. The switch trunk equipment is provided with wink start start-pulsing signals and answer and disconnect supervisory signaling.

(3) FGD switching is provided with multi-frequency address signaling. Up to twelve (12) digits of the called party number dialed by the customer's end user using dual tone multifrequency or dial pulse address signals will be provided by KNAD equipment to the customer's point of interconnection. Such address signals will be subject to the ordinary transmission capabilities of the Switched Transport provided.

(4) FGD switching, when used in the terminating direction, may be used to access valid NXXs in the LATA, time or weather announcement services of a Routing Exchange Carrier, community information services of an information service provider, and other customers' services (by dialing the appropriate codes) when such services can be reached using valid NXX codes. Only those valid NXX codes served by end office switches subtending KNAD's central access tandem may be accessed.

The customer will also be billed additional non-access charges for calls to certain community information services, for which rates are applicable, e.g., 976

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6. Switched Access Service (Cont'd)

6.2 Provision and Description of Switched Access Service Feature Groups (Cont'd)

6.2.5 Feature Group D (FGD) (Cont'd)

(A) Description (Cont'd)

(4) (Cont'd)

(DIAL-IT) Network Services. Additionally, non-access charges will also be billed for calls from a FGD trunk to another customer's service in accordance with the customer's applicable service rates when KNAD performs the billing function for that customer.

Calls in the terminating direction will not be completed to 950-OXXX or 950-1XXX access codes, local operator assistance (O- and O+), and 10XXX access codes. FGD may not be switched, in the terminating direction, to Switched Access Service Feature Groups A, or D. (C)

The customer will also be billed access charges by Routing Exchange Carriers and other Exchange Telephone Companies for the provision of access service in their operating territories between a KNAD premises listed in Section 8 following and the end offices served by KNAD's central access tandem.

(5) FGD switching will be arranged to accept calls from the telephone exchange service locations without the need for dialing the 10XXX uniform access code. Each telephone exchange service line may be marked with a code to identify to which 10XXX code its calls will be directed for interLATA service. The access code for FGD switching is a uniform access code of the form 10XXX unless a Routing Exchange Carrier's end office switch is unable to provide a uniform 10XXX code. A single access code will be the assigned number of all FGD access provided to the customer by KNAD. No access code is

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6. Switched Access Service (Cont'd)

6.2 Provision and Description of Switched Access Service Feature Groups (Cont'd)

6.2.5 Feature Group D (FGD) (Cont'd)

(A) Description (Cont'd)

(5) (Cont'd)

required for calls to a customer over FGD Switched Access Service if the end user's telephone exchange service is arranged for presubscription to that customer. Where no access code is required, the number dialed by the end user shall be a seven (7) or ten (10) digit number, where appropriate, for calls in the North American Numbering Plan (NANP). The form of the numbers dialed by the end user is NXX-XXXX, 0 or 1 + NXX-XXXX, NPA+ NXX-XXXX, 0 or 1+ NPA + NXX - XXXX, and for International Direct Distance Dialing (IDDD), 01 + CC + NN or 011 + CC + NN.

The end offices of the Routing Exchange Carriers that are listed in Attachment 1 are unable to provide a uniform 10XXX code.

(D)

(D)

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6. Switched Access Service (Cont'd)

6.2 Provision and Description of Switched Access Service Feature Groups (Cont'd)

6.2.5 Feature Group D (FGD) (Cont'd)

(A) Description (Cont'd)

(7) Unless prohibited by technical limitations, the customer's Interim NXX Translation traffic may, at the option of the customer, be combined in the same trunk group arrangement with the customer's non-Interim NXX Translation traffic. When required by technical limitations, or at the request of the customer, a separate trunk group will be established for Interim NXX translation traffic.

(B) Transmission Performance

FGD is provided with Type A Transmission Specifications.

Type DA Data Transmission Parameters are provided for the transmission path between the customer's premises and the access tandem and between the access tandem and the end office.

(C) FGD is provided, in the terminating direction where equipment is available, with seven (7) digit access to balance (100 type) test line, nonsynchronous or synchronous test line, automatic transmission measuring (105 type) test line, loop around test line, short circuit test line and open circuit test line. In addition to the tests described in 6.1.5 preceding which are included with the installation of service, Additional Cooperative Acceptance Testing and Additional Automatic Testing will be provided for FGD as set forth in 13.3.4 following.

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6. Switched Access Service (Cont'd)

6.3 Reserved for Future Use.

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6. Switched Access Service (Cont'd)

6.4 Transmission and Specifications

Each Switched Access Service transmission path is provided with standard transmission specifications. There are two different standard specifications (Types A and B). The standard for the transmission path is dependent on the Feature Group. The available transmission specifications are set forth in 6.4.1 and 15.2.1 following. Data Transmission Parameters are also provided with the Switched Access Service transmission path. KNAD will, upon notification by the customer that the data parameters set forth in 6.4.2(A), (B) or 15.2.2 are not being met, conduct tests independently or in cooperation with the customer, and take any necessary action to insure that the data parameters are met.

All service configurations operated by KNAD after the effective date of this tariff will conform to the transmission specifications contained in this tariff.

The transmission specifications contained in this Section are immediate action limits. Acceptance limits are set forth in Technical Reference TR-NWT-000334. This Technical Reference also provides the basis for determining Switched Access Service maintenance limits.

6.4.1 Standard Transmission Specifications

Following are descriptions of the two Standard Transmission Specifications available with Switched Access Service Feature Groups. The specific applications in terms of the Feature Groups and Interface Group with which the Feature Group Standard Transmission Performances are provided as set forth in 6.2.4(B) preceding.

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6. Switched Access Service (Cont'd)

6.4 Transmission Specifications (Cont'd)

6.4.1 Standard Transmission Specifications (Cont'd)

(A) Type A Transmission Specifications

Type A Transmission Specifications are provided with the following parameters:

(1) Loss Deviation

The maximum Loss Deviation of the 1004 Hz loss relative to the Expected Measured Loss (EML) is +/-2.0dB.

(2) Attenuation Distortion

The maximum Attenuation Distortion in the 404 to 2804 Hz frequency band relative to the loss at 1004 Hz is -1.0 dB to +3.0 dB.

(3) C-Message Noise

The maximum C-Message Noise for the transmission path at the route miles listed is less than or equal to:

Route Miles	C-Message Noise
less than 50	32 dBrnCO
51 to 100	34 dBrnCO
101 to 200	37 dBrnCO
201 to 400	40 dBrnCO
401 to 1000	42 dBrnCO

(4) C-Notched Noise

The maximum C-Notched Noise, utilizing a -16 dMnO holding tone, is less than or equal to 45 dBrnCO.

(5) Echo Control

Echo Control, identified as Equal Level Echo Path Loss, and expressed as Echo

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6. Switched Access Service (Cont'd)

6.4 Transmission Specifications (Cont'd)

6.4.1 Standard Transmission Specifications (Cont'd)

(A) Type A Transmission Specifications (Cont'd)

(5) Echo Control (Cont'd)

Return Loss is equal to or greater than the following:

Echo Return Loss	Singing Return Loss
16 dB	11 dB

(B) Type B Transmission Specifications

Type B Transmission Specifications are provided with the following parameters:

(1) Loss Deviation

The maximum Loss Deviation of the 1004 Hz loss relative to the Expected Measured Loss (EML) is +/- 2.5 dB.

(2) Attenuation Distortion

The maximum Attenuation Distortion in the 404 to 2804 Hz frequency band relative to loss at 1004 Hz is -2.0 dB to +4.0 dB.

(3) C-Message Noise

The maximum C-Message Noise for the transmission path at the route miles listed is less than or equal to:

Route Miles	C-Message Noise Type B1	C-Message Noise Type B2
less than 50	32 dBrnCO	35 dBrnCO
51 to 100	33 dBrnCO	37 dBrnCO
101 to 200	35 dBrnCO	40 dBrnCO
201 to 400	37 dBrnCO	43 dBrnCO
401 to 1000	39 dBrnCO	45 dBrnCO

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6. Switched Access Service (Cont'd)

6.4 Transmission Specifications (Cont'd)

6.4.1 Standard Transmission Specifications (Cont'd)

(B) Type B Transmission Specifications (Cont'd)

(4) C-Notched Noise

The maximum C-Notched Noise, utilizing a -16 dBmO holding tone is less than or equal to 47 dBrnCO.

(5) Echo Control

Echo Control is identified as Equal Level Echo Path Loss for FGD, and expressed as Echo Return Loss (ERL) and Singing Return Loss (SRL). The ERL and SRL also differ by Feature Group. They are greater than or equal to the following: (C)

	Echo Return Loss	Singing Return Loss
0 For FGB access	8dB	4 dB

(C) Reserved for Future Use.

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6. Switched Access Service (Cont'd)

6.4 Transmission Specifications (Cont'd)

6.4.2 Data Transmission Parameters

Two types of Data Transmission Parameters, i.e., Type DA and Type DB, are provided for the Feature Group arrangements. The specific applications in terms of the Feature Groups with which they are provided are set forth in 6.2.2(B) and 6.2.4(B) preceding. Following are descriptions of each.

(A) Data Transmission Parameters Type DA

(1) Signal to C-Notched Noise Ratio

The Signal to C-Notched Noise Ratio is equal to or greater than 33 dB.

(2) Envelope Delay Distortion

The maximum Envelope Delay Distortion for the frequency bands and route miles specified is:

	604 to 2804 Hz
less than 50 route miles	500 microseconds
equal to or greater than 50 route miles	900 microseconds

	1004 to 2404 Hz
Less than 50 route miles	200 microseconds
equal to or greater than 50 route miles	400 microseconds

(3) Impulse Noise Counts

The Impulse Noise Counts exceeding a 65 dBrnCO threshold in fifteen (15) minutes is no more than fifteen counts.

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6. Switched Access Service (Cont'd)

6.4 Transmission Specifications (Cont'd)

6.4.2 Data Transmission Parameters (Cont'd)

(A) Data Transmission Parameters Type DA (Cont'd)

(4) Intermodulation Distortion

The Second order (R2) and Third Order (R3) Intermodulation Distortion products are equal to or greater than:

Second Order (R2)	33 dB
Third Order (R3)	37 dB

(5) Phase Jitter

The Phase Jitter over the 4-300 Hz frequency band is less than or equal to 5 degrees peak-to-peak.

(6) Frequency Shift

The maximum Frequency Shift does not exceed -2 to +2 Hz.

(B) Data Transmission Parameters Type DB

(1) Signal to C-Notched Noise Ratio

The signal to C-Notched Noise Ratio is equal to or greater than 30 dB.

(2) Envelope Delay Distortion

The maximum Envelope Delay Distortion for the frequency bands and route miles specified is:

	604 to 2804 Hz
less than 50 route miles	800 microseconds
equal to or greater than 50 route miles	1000 microseconds

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6. Switched Access Service (Cont'd)

6.4 Transmission Specifications (Cont'd)

6.4.2 Data Transmission Parameters (Cont'd)

(B) Data Transmission Parameters Type DB (Cont'd)

(2) Envelope Delay Distortion (Cont'd)

	1004 to 2404 Hz
less than 50 route miles	320 microseconds
equal to or greater than 50 route miles	500 microseconds

(3) Impulse Noise Counts

The Impulse Noise Counts exceeding a 67 dBrnCO threshold in fifteen (15) minutes is no more than fifteen (15) counts.

(4) Intermodulation Distortion

The Second Order (R2) and Third Order (R3) Intermodulation Distortion products are equal to or greater than:

Second order (R2)	31 dB
Third Order (R3)	34 dB

(5) Phase Jitter

The Phase Jitter over the 4-300 Hz frequency band is less than or equal to 7 degrees peak-to-peak.

(6) Frequency Shift

The maximum Frequency Shift does not exceed -2 to +2 Hz.

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6. Switched Access Service (Cont'd)

6.5 Obligations of KNAD

In addition to the obligations of KNAD set forth in Section 2 preceding, KNAD has certain other obligations pertaining only to the provision of Switched Access Service. These obligations are as follows:

6.5.1 Network Management

KNAD will administer its network to ensure the provision of acceptable service levels to all telecommunications users of KNAD's services. KNAD maintains the right to apply protective controls, i.e., those actions, such as call gaping, which selectively cancel the completion of traffic, over any traffic carried over its network, including that associated with a customer's Switched Access Service. Generally, such protective measures would only be taken as a result of occurrences such as failure or overload of KNAD or customer facilities, natural disasters, mass calling or national security demands. In the event that the protective controls applied by KNAD result in the complete loss of service by the customer, the customer will be granted a Credit. Allowance for Service Interruption as set forth in 2.4.4(B)(1) preceding.

6.5.2 Design and Traffic Routing of Switched Access Service

When a customer's point of termination is located at KNAD's central access tandem, KNAD shall design and determine the routing of Switched Access Service and the selection of facilities from KNAD's central access tandem to the end offices of the Routing Exchange Carriers serving the customer. When a customer's point of interconnection is located at a KNAD premises listed in Section 8. following other than Moundridge, Kansas, KNAD shall design and determine the routing of Switched Access Service and the selection of facilities from that KNAD premises to KNAD's central access tandem. For Feature Groups A, B and D, KNAD's central access tandem will always be the first point of switching.

KNAD shall also decide if capacity is to be provided by originating only, terminating only, or two-way trunk groups.

VIRTUAL EQUAL ACCESS SERVICE

6. Switched Access Service (Cont'd)

6.5 Obligation of KNAD (Cont'd)

6.5.2 Design and Traffic Routing of Switched Access Service (Cont'd)

Finally, KINI will decide whether trunk side access will be provided through the use of two-wire or four-wire trunk terminating equipment. Selection of facilities and equipment and traffic routing of the service are based on standard engineering methods, available facilities and equipment, and the KINI traffic routing plans.

If the customer desires routing or directionality different from that determined by KINI, KINI will work cooperatively with the customer in determining the directionality of the service.

6.5.3 Provision of Service Performance Data

Subject to availability, end-to-end service performance data available to KINI through its own service evaluation routines, may also be made available to the customer based on previously arranged intervals and format. These data provide information on overall end-to-end call completion and noncompletion performance, e.g., customer equipment blockage, failure results and transmission performance. These data do not include service performance data which are provided under other tariff sections, e.g., testing service results. If data are to be provided in other than paper format, the charges for such exchange will be determined on an individual case basis.

6.5.4 Trunk Group Measurement Reports

Subject to availability, KINI will make available trunk group data in the form of usage in CCS, peg count and overflow, to the customer based on previously agreed to intervals.

6.5.5 Determination of Number of Transmission Paths

KINI will determine the number of Switched Access Service transmission paths to be provided for the Switched Access Feature Groups ordered. A transmission path is a derived communication path of a frequency (C)

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6. Switched Access Service (Cont'd)

6.5 Obligations of KNAD (Cont'd)

6.5.5 Determination of Number of Transmission Paths (Cont'd)

bandwidth of approximately 300 Hz to 3000 Hz provided over a high speed digital facility between a customer's point of interconnection listed in Section 8. following and KINI's central access tandem. The number of transmission paths will be developed using the total busy hour minutes of capacity by type (as described in 6.1.1 (F) preceding) for each Feature Group ordered to KINI's central access tandem. The total busy hour minutes of capacity by type for the Feature Group will be converted to transmission paths using standard traffic engineering methods. (C) (C)

6.5.6 Reserved for Future Use.

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6. Switched Access Service (Cont'd)

6.5 Obligations of KNAD (Cont'd)

6.5.7 Design Blocking Probability

KINI will design the facilities used in the provision of Switched Access Service to meet the blocking probability criteria as set forth in (A) through (D) following.

(A) (D)

(B) For Feature Group D, the design blocking objective will be no greater than one percent (1%) between the customer's point of interconnection set forth in Section 8. following and KINI's central access tandem. Standard traffic engineering methods as set forth in reference document Telecommunications Transmission Engineering - Volume 3 – Networks and Services (Chapters 6-7) will be used by KINI to determine the number of transmission paths required to achieve this level of blocking.

(C) KINI will perform routine measurement functions to assure that an adequate number of transmission paths are in service. KINI will recommend that additional busy hour minutes of capacity be ordered by the customer when additional paths are required to reduce the measured blocking to the design blocking level. For the capacity ordered, the design blocking objective is assumed to have been met if the routine measurements show that the measured blocking does not exceed the threshold listed in the following table.

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6. Switched Access Service (Cont'd)

6.5 Obligations of KNAD (Cont'd)

6.5.7 Design Blocking Probability (Cont'd)

(C) (Cont'd)

Number of Transmission Paths Per Trunk Group	Measured Blocking Thresholds in the Time Consistent Busy Hour for the Number of Average Business Day Measurements Per Trunk Group			
	15-20 Measurements	11-14 Measurements	7-10 Measurements	3-6 Measurements
2	.045	.055	.060	.095
3	.035	.040	.045	.060
4	.035	.040	.045	.055
5-6	.025	.035	.040	.045
7 or more	.020	.025	.030	.040

6.6 Obligations of the Customer

In addition to the obligations of the customer set forth in Section 2. preceding, the customer has certain specific obligations pertaining to the use of Switched Access Service. These obligations are as follows:

6.6.1 Report Requirements

Customers are responsible for providing the following reports to KNAD when applicable.

(A) Jurisdictional Reports

When a customer orders Switched Access Service for both interstate and intrastate use, the customer is responsible for providing reports as set forth in 2.3.14 preceding. Charges will be apportioned in accordance with those reports. The method to be used for determining the interstate charges is set forth in 2.3.15 preceding.

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6. Switched Access Service (Cont'd)

6.6 Obligations of the Customer (Cont'd)

6.6.2 Supervisory Signaling

The customer's facilities shall provide the necessary on-hook, off-hook, answer and disconnect supervision.

6.6.3 Trunk Group Measurement Reports

With the agreement of the customer, trunk group data in the form of usage in CCS, peg count and overflow for its end of all access trunk groups, where technologically feasible, will be made available to KNAD. These data will be used to monitor trunk group utilization and service performance and will be based on previously arranged intervals and format.

6.6.4 Design of Switched Access Services

When a customer orders Switched Access Service, the customer shall take reasonable steps to assure that sufficient access services have been ordered to handle its traffic.

6.6.5 Short Duration Mass Calling Requirements

When a customer offers service for which a substantial call volume is expected during a short period of time (e.g., 900 service media stimulated events), the customer must notify KNAD and the affected Routing Exchange Carriers at least 48 hours in advance of each peak period. Notification should include the nature, time, duration, and frequency of the event, an estimated call volume, and the telephone number(s) to be used.

On the basis of the information provided, KNAD may invoke network management controls, (e.g., call gaping and code blocking) to reduce the possibility of excessive network congestion. KNAD will work cooperatively with the customer to determine the appropriate level of such control.

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6. Switched Access Service (Cont'd)

6.7 Rate Regulations

This section contains the specific regulations governing the rates and charges that apply for Switched Access Service.

6.7.1 Description and Application of Rates and Charges

There are two types of rates and charges that apply to Switched Access Service. These are usage rates and nonrecurring charges.

(A) Usage

Switched Access Usage Rates are rates that apply only when a specific rate element is used. These rates are applied on a per access minute basis. Usage rates are accumulated over a monthly period.

(B) Nonrecurring Charges

Nonrecurring charges are one-time charges that apply for a specific work activity (i.e. installation or change to an existing service). The types of nonrecurring charges that apply for Switched Access Service Are: installation of service, Interim NXX Translation Optional feature, and service rearrangements.

(1) Installation of Service

Nonrecurring charges apply to each Switched Access Service installed. For FGD, which is ordered on a Busy Hour Minutes of Capacity or trunk basis, the charge is applied on a per trunk basis b customer. (C) (C)

VIRTUAL EQUAL ACCESS SERVICE

6. Switched Access Service

6.7 Rate Regulations (Cont'd)

6.7.1 Description and Application of Rates and Charges (Cont'd)

(B) Nonrecurring Charges (Cont'd)

(2) Interim NXX Translation Optional Feature

This nonrecurring charge applies to the initial order for the installation of the Interim NXX Translation optional feature with Feature Group D Switched Access Service and for each subsequent order received to add or change NXX translation codes. This charge, if applicable, applies whether this optional feature is installed coincident with or at any time subsequent to the commencement of Switched Access Service. When it is necessary for multiple telephone companies to provide the translation function, the nonrecurring charge is assessed only by the company that provides the final translation function which identifies the customer's traffic and this traffic is then delivered to the customer's point of termination without any further translation.

(3) Service Rearrangements

All changes to existing services, other than charges involving administrative activities listed in (C) following, will be treated as a discontinuance of the existing service and an installation of a new service. The nonrecurring charge described in (1) preceding will apply for this work activity.

(C) Administrative Changes

Changes which result in the establishment of new minimum period obligations are treated as discontinuances of existing service and installations of new service.

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6. Switched Access Service (Cont'd)

6.7 Rate Regulations (Cont'd)

6.7.1 Description and Application of Rates and Charges (Cont'd)

(C) Administrative Changes (Cont'd)

Administrative changes as follows will be made without changes to minimum period obligations:

- Change of customer name,
- Change of customer or customer's end user premises address when the change of address is not a result of a physical relocation of equipment,
- Change in billing data (name, address, or contact name or telephone number),
- Change of agency authorization,
- Change of customer circuit identification,
- Change of billing account number,
- Change of customer test line number,
- Change of customer or customer's end user contact name or telephone number, and
- Change of jurisdiction.

(D) Reserved for Future Use.

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6. Switched Access Service (Cont'd)

6.7 Rate Regulations (Cont'd)

6.7.1 Description and Application of Rates and Charges (Cont'd)

(E) Reserved for Future Use.

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6. Switched Access Service (Cont'd)

6.7 Rate Regulations (Cont'd)

6.7.1 Description and Application of Rates and Charges (Cont'd)

(F) Application of the Switched Transport Rate

The switched transport rate applies per access minute.

6.7.2 Minimum Period

Switched Access Service is provided for a minimum period of one (1) month.

6.7.3 Reserved for Future Use.

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6. Switched Access Service (Cont'd)

6.7 Rate Regulations (Cont'd)

6.7.4 Reserved for Future Use.

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6. Switched Access Service (Cont'd)

6.7 Rate Regulations (Cont'd)

6.7.5 Reserved for Future Use.

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6. Switched Access Service (Cont'd)

6.7 Rate Regulations (Cont'd)

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6. Switched Access Service (Cont'd)

6.7 Rate Regulations (Cont'd)

6.7.7 Measuring Access Minutes

Customer traffic to and from end offices of the Routing Exchange Carriers set forth in Section 9. following will be measured (i.e., recorded) by KINI at its central access tandem. Originating and terminating calls will be measured (i.e., recorded) by KINI to determine the basis for computing chargeable access minutes. In the event the customer message detail is not available because KINI lost or damaged tapes or incurred recording system outages, KINI will estimate the volume of lost customer access minutes of use based on previously known values. For terminating and for originating calls over FGD, the measured minutes are the chargeable (C) access minutes.

FGD access minutes or fractions thereof, the exact value of the fraction being a function of the switch technology where the measurement is made, are accumulated over the billing period for each end office, and are then rounded up to the nearest access minute for each end office. (C)

(A) Reserved for Future Use.

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6. Switched Access Service (Cont'd)

6.7 Rate Regulations (Cont'd)

6.7.7 Measuring Access Minutes (Cont'd)

(B) (D)

(D)

(C) Reserved for Future Use.

VIRTUAL EQUAL ACCESS SERVICE

6. Switched Access Service (Cont'd)

6.7 Rate Regulations (Cont'd)

6.7.7 Measuring Access Minutes (Cont'd)

(D) Feature Group D Usage Measurement

For originating calls over FGD, usage measurement begins when KNAD's central access tandem receives the first wink supervisory signal forwarded from the customer's switch. The measurement of originating call usage over FGD ends when KNAD's central access tandem receives disconnect supervision from either the originating end user's end office, indicating the originating end use has disconnected, or the customer's switch, whichever is recognized first by KNAD's central access tandem.

For terminating calls over FGD, the measurement of access minutes begins when the terminating FGD first point of switching receives answer supervision from the terminating end user's end office, indicating the terminating end user has answered.

The measurement of terminating call usage over FGD ends when KNAD's central access tandem receives disconnect supervision from either the terminating end user's end office, indicating the terminating end user has disconnected, or the customer's switch, whichever is recognized first by KNAD's central access tandem.

6.7.8 Network Blocking Charge for Feature Group D

The customer will be notified by KNAD to increase its busy hour minutes of capacity when excessive trunk group blocking occurs on groups carrying Feature Group D traffic and the measured access minutes for that hour exceed that purchased. Excessive trunk group blocking occurs when the blocking thresholds stated below are exceeded. They are predicated on time consistent, hourly measurements over a thirty (30) day period excluding Saturdays, Sundays and national holidays. If the order for additional capacity has not been received by KNAD within fifteen (15) days of the notification,

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6. Switched Access Service (Cont'd)

6.7 Rate Regulations (Cont'd)

6.7.8 Network Blocking Charge for Feature Group D (Cont'd)

KNAD will bill the customer, at the rate set forth in 6.8.1(B) following, for each overflow in excess of the blocking threshold when (1) the average "30-day period" overflow exceeds the threshold level for any particular hour and (2) the "30-day period" measured average originating or two-way usage for the same clock hour exceeds the capacity purchased.

Blocking Thresholds

Trunks in Service	1/2%
1-2	.045
3-4	.035
5-6	.025
7 or greater	.020

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6. Switched Access Service (Cont'd)

6.8 Rates and Charges

6.8.1 Switched Access Service

		Rate Per Access Minute
(A)	Rate	
	Switched Access	$0.0167
	Access Transport	$0.0062
		Rate Per Call Blocked
(B)	Network Blocking Charge (Applies to FGD)	$0.0070
(C)	Nonrecurring Charges	
	(1) Installation	**Rate Per Trunk**
	Activation of the first trunk contained in the order	$432.00
	Activitation of each additional trunk contained in an order	$ 16.00
	(2) Interim NXX Translation	**Rate Per Order**
	Activation or deactivation of the first NXX code contained in an order	$213.70
	Activation or deactivation of each additional NXX code contained in an order	$ 23.81

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VIRTUAL EQUAL ACCESS SERVICE

8. Customer's Point of Termination Information

8.1 General Information

Virtual Equal Access Service is available to customers that interconnect with KNAD's facilities at either KNAD's central tandem or other KNAD's Points of Interconnection (POI) listed in this section. The V&H coordinates for the serving wire centers of the points of termination listed in Section 8.2 following are set forth in National Exchange Carrier Association, Inc. Tariff F.C.C. No. 4. (X)

8.2 Customer's Point of Termination

Central Access Tandem	KNAD's POTS
Moundridge, Kansas	Salina, Kansas Hays, Kansas Dodge City, Kansas Wichita, Kansas Kansas City, Kansas Topeka, Kansas Hutchinson, Kansas

(X) Issued under authority of Special Permission Number 92-624 of the Federal Communications Commission.

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VIRTUAL EQUAL ACCESS SERVICE

9. Routing Exchange Carriers

9.1 Exchanges and Localities

The names and the Routing Exchange Carriers (RECs) are as follows:

RECs	
Blue Valley Telephone Company	
Cunningham Telephone Company, Inc.	
Golden Belt Telephone Association, Inc.	
Gorham Telephone Company	
H & B Communications, Inc.	
KanOkla Telephone Association, Inc.	
MoKan Dial Company, Inc.	
Madison Telephone Company, Inc.	
Moundridge Telephone Company, Inc.	
Mutual Telephone Company	
Peoples Mutual Telephone Company	
Rainbow Telephone Coop Association, Inc.	
S & T Telephone Coop Association	
South Central Telephone Association	
Sunflower Telephone Company, Inc.	
Totah Telephone Company, Inc.	
Tri-County Telephone Association, Inc.	
United Telephone Association, Inc.	
Zenda Telephone Company, Inc.	
Routing Exchange Carriers Total	19

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10. Other Routing Cellular Carriers

The names and Other Routing Cellular Carriers (RCCs) are as follows:

RCCs	
Liberty Cellular, Inc.	
Routing Cellular Carriers Total	1

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VIRTUAL EQUAL ACCESS SERVICE

13. Additional Engineering, Additional Labor and Miscellaneous Services

In this section, normally scheduled working hours are an employee's scheduled work period in any given calendar day (e.g., 8:00 a.m. to 5:00 p.m.) for the application of rates based on working hours. A Miscellaneous Service Order Charge applies to any service, or combination of services ordered simultaneously from this section of the Tariff for which a service order is not already pending which does not have the charge applied. The Miscellaneous Service Order Charge is an administrative charge designed to compensate for the expenses associated with service order issuance. This charge is as follows:

- Miscellaneous Service Order Charge, per occurrence $25.00

The charge always applies to the following services since a pending service order would not exist: Overtime Repair (13.2.2), Stand By Repair (13.2.3), Testing and Maintenance with Other Telephone Companies other than when in conjunction with Acceptance Testing (13.2.4), Other Labor (13.2.5) and Maintenance of Service (13.3.1).

The charge does not apply to the following services since there would exist a pending service order: Additional Engineering (13.1), Overtime Installation (13.2.1), Stand by Acceptance Testing (13.2.3), Testing and Maintenance with Exchange Telephone Companies when in conjunction with Acceptance Testing (13.2.4), and Additional Cooperative Acceptance Testing [13.3.4(A)(1) and 13.3.4(B)(1)].

13.1 Aditional Engineering

Additional Engineering will be provided by KNAD at the request of the customer only when:

(A) A customer requests additional technical information after KNAD has already provided the technical information normally included on the Design Layout Report (DLR) as set forth in 6.1.4 preceding.

(B) Reserved for Future Use.

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13. Additional Engineering, Additional Labor and Miscellaneous Services (Cont'd)

13.1 Additional Engineering (Cont'd)

(C) A customer requests a Design Change and additional engineering time is incurred by KNAD for the engineering review as set forth in 5.2.2(C). The charge for additional engineering will apply whether or not KNAD proceeds with the design change.

KNAD will notify the customer that additional engineering charges, as set forth in 13.1.1 following, will apply before any additional engineering is undertaken.

13.1.1 Charges for Additional Engineering

The charges for additional engineering are as follows:

Additional Engineering Periods		Each Half Hour or Fraction Thereof
(A)	Basic Time, normally scheduled working hours, per engineer	$30.00

Additional Engineering Periods		Each Half Hour or Fraction Thereof
(B)	Overtime, outside of regularly scheduled working hours, per engineer	$45.00

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13. Additional Engineering, Additional Labor and Miscellaneous Services (Cont'd)

13.2 Additional Labor

Additional labor is that labor requested by the customer on a given service and agreed to by KNAD as set forth in 13.2.1 through 13.2.5 following. KNAD will notify the customer that additional labor charges as set forth in 13.2.6 following will apply before any additional labor is undertaken.

13.2.1 Overtime Installation

Overtime installation is that KNAD installation effort outside of regularly scheduled working hours.

13.2.2 Overtime Repair

Overtime repair is that KNAD maintenance performed outside of regularly scheduled working hours.

13.2.3 Stand By

Stand by includes all time in excess of one-half (1/2) hour during which KNAD personnel stand by to make installation acceptance tests or cooperative tests with a customer to verify facility repair on a given service.

13.2.4 Testing and Maintenance with Exchange Telephone Companies

Additional testing, maintenance or repair of facilities which connect to facilities of Exchange Telephone Companies which is in addition to normal effort required to test, maintain or repair facilities provided solely by KNAD.

13.2.5 Other Labor

Other labor is that additional labor not included in 13.2.1 through 13.2.4 preceding and labor incurred to accommodate a specific customer request that involves only labor which is not covered by any other section of this tariff.

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13. Additional Engineering, Additional Labor and Miscellaneous Services (Cont'd)

13.2 Additional Labor (Cont'd)

13.2.6 Charges for Additional Labor

The charges for additional labor are as follows:

(A) Installation or Repair

Additional Labor Periods	Each Half Hour or Fraction Thereof
- Overtime, outside of regularly scheduled working hours, on a scheduled work day, per technician	$24.00

(B) Stand by

Additional Labor Periods	Each Half Hour or Fraction Thereof
- Basic time, regularly scheduled working hours, per technician	$16.00
- Overtime, outside of regularly scheduled working hours, on a scheduled work day, per technician	$24.00
- Premium Time, outside of scheduled work day, per technician	$32.00

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13. Additional Engineering, Additional Labor and Miscellaneous Services (Cont'd)

13.2 Additional Labor (Cont'd)

13.2.6 Charges for Additional Labor (Cont'd)

The charges for additional labor are as follows:

Additional Labor Periods	Each Half Hour of Fraction Thereof	
	Installation and Repair Technician	Central Access Tandem Maintenance Technician
(C) Testing and Maintenance with Exchange Telephone Companies, or Other Labor		
- Basic Time, regularly scheduled working hours, per technician	$45.00	$45.00 (I)
- Overtime, outside of regularly scheduled working hours on a scheduled work day, per technician	$90.00	$90.00 (I)
- Premium Time, outside of scheduled work day, per technician	$90.00	$90.00 (I)

13.3 Miscellaneous Services

13.3.1 Maintenance of Service

(A) When a customer reports a trouble to KINI for clearance and no trouble is found in KINI's facilities, the customer shall be responsible for payment of a Maintenance of Service charge for the period of time from when KINI personnel are dispatched to the customer point of interconnection to when the work is completed. Failure of KINI personnel to find trouble in KINI's facilities will result in no charge if the trouble is actually in those facilities, but not discovered at the time.

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13. Additional Engineering, Additional Labor and Miscellaneous Services (Cont'd)

13.2 Miscellaneous Services (Cont'd)

13.3.1 Maintenance of Service (Cont'd)

(B) The customer shall be responsible for payment of a Maintenance of Service charge when KNAD dispatches personnel to the customer point of interconnection and the trouble is in equipment or communications systems not provided by KNAD. In either (A) or (B) preceding, no credit allowance will be applicable for the interruption involved if the Maintenance of Service charge applies.

(C) The charges for Maintenance of Service are as follows:

Maintenance Service Periods	Each Half Hour or Fraction Thereof
Basic Time, Overtime and Premium Time	See the rates for Additional Labor set forth in 13.2.6(C) preceding.

13.3.2 Reserved for Future Use.

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13. Additional Engineering, Additional Labor and Miscellaneous Services (Cont'd)

13.3 Miscellaneous Services (Cont'd)

13.3.3 Reserved for Future Use.

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13. Additional Engineering, Additional Labor and Miscellaneous Services (Cont'd)

13.3 Miscellaneous Services (Cont'd)

13.3.4 Testing Services

KNAD will, in addition to any customer requested acceptance testing, perform such tests as it believes necessary to ensure that the access services ordered by a customer are functioning properly prior to furnishing such access services to the customer. In addition, KNAD, as part of the ongoing work to maintain the continued satisfactory performance of the access services ordered by the customer, may perform periodic tests.

Testing Services offered under this section of the tariff are optional and subject to rates and charges as set forth in 13.3.4(C) following. Other testing services, as described in 6.1.5 and 6.1.6 preceding, are provided by KNAD in association with Access Services and are furnished at no additional charge. Testing Services are normally provided by KNAD personnel at KNAD's locations. In addition, KNAD will, at the request of the customer, perform Acceptance Testing with the customer in accordance with the provisions set forth in Section 6. preceding.

The offering of Testing Services under this section of the Tariff is made subject to the availability of the necessary qualified personnel and test equipment at the various test locations mentioned in (A), (B) and (C) following.

(A) Switched Access Service

Testing services for Switched Access are comprised of (a) tests which are performed during the installation of a Switched Access Service, and (b) tests which are performed after acceptance of such access services by a customer, i.e., in-service tests. These in-service tests may be further divided into two broad categories of tests: scheduled and nonscheduled.

Scheduled tests are those tests performed by KNAD on a regular basis, as set forth in Section 6.1.6 preceding which are required to maintain

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13. Additional Engineering, Additional Labor and Miscellaneous Services (Cont'd)

13.3 Miscellaneous Services (Cont'd)

13.3.4 Testing Services (Cont'd)

(A) Switched Access Service (Cont'd)

Switched Access Service. Scheduled tests may be done on an automatic basis (no KNAD or customer technicians involved) or on a cooperative basis (KNAD technician(s) involved at KNAD office(s) and customer technicians involved at customer terminal location(s)).

(1) Additional Cooperative Acceptance Testing

Additional Cooperative Acceptance Testing (ACAT) of Switched Access Service involves KNAD provision of a technician at its offices(s) and the customer provides a technician at its terminal location(s), with suitable test equipment to perform the required tests.

Additional Cooperative Acceptance Tests may, for example, consist of the following tests:

- C-Notched Noise
- Impulse Noise
- Phase Jitter
- Signal to C-Notched Noise Ratio
- Intermodulation (Nonlinear) Distortion
- Frequency Shift (Offset)
- Envelope Delay Distortion
- Dial Pulse Percent Break

(2) Additional Automatic Testing

Additional Automatic Testing (AAT) of Switched Access Services (Feature Groups A and D), where the customer provides remote office test lines and 105 test lines with associated responders or their functional equivalent, will consist of monthly loss and C-message noise tests and an annual balance test. However, the customer may specify a more frequent

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13. Additional Engineering, Additional Labor and Miscellaneous Services (Cont'd)

13.3 Miscellaneous Services (Cont'd)

13.3.4 Testing Services (Cont'd)

(A) Switched Access Service (Cont'd)

(2) (Cont'd)

schedule of tests. In addition to the loss/noise/balance tests, the customer may also order, at additional charges, gain-slope and C-notched noise testing.

KNAD will provide an AAT report that lists the test results for each trunk tested. Trunk test failures requiring customer participation for trouble resolution will be provided to the customer on an as-occurs basis.

(3) Obligations of the Customer

(a) The customer shall provide the Remote Office Test Line priming data to KNAD as appropriate, to support AAT as set forth in 13.3.4(A)(2) preceding.

(B) Reserved for Future Use.

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13. Additional Engineering, Additional labor and Miscellaneous Services (Cont'd)

13.3 Miscellaneous Services (Cont'd)

13.3.4 Testing Services (Cont'd)

(C) Rates and Charges

(1) Switched Access

(a) Additional Cooperative Acceptance Testing

Testing Period	Each Half Hour or Fraction Thereof
Basic Time, Overtime and Premium Time	See the rates for Additional Labor as set forth in 13.2.6(C) preceding.

(b) Additional Automatic Testing (AAT)

The Additional Tests as set forth following may be ordered by the customer, at additional charges, 60 days prior to the start of the customer prescribed schedule.

Additional Tests	To First Point of Switching Per Test Per Transmission Path
Gain-Slope Tests	$3.58
C-Notched Noise Tests	$3.58
1004 Hz Loss	$3.58
C-Message Noise	$3.58
Balance (return loss)	$3.58

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13. Additional Engineering, Additional Labor and Miscellaneous Services (Cont'd)

13.3 Miscellaneous Services (Cont'd)

13.3.5 Provision of Access Service Billing Information

(A) The customer will receive its monthly bills in a standard paper format.

(B) At the option of the customer, and for an additional charge:

(1) Customer monthly bills may be provided on magnetic tape.

(2) Billing detail and/or information may be transmitted to the customer terminal to the customer terminal location by data transmission.

(3) Additional copies of the customer monthly bill or service and features record may be provided in standard paper format.

(C) Upon acceptance by KNAD of an order for data transmission, KNAD will determine the period of time to implement the transmission of such material on an individual order basis.

(D) The rates and charges for the provision of Access Service Billing Information are as follows:

	FID	Rates
(1) Provision of Standard Bill Detail and/or Information in magnetic tape format, per record	DMT	ICB rates and charges apply
(2) Data Transmission to a customer Terminal Location of Bill Detail and/or Information, per record transmitted	TRMD B	ICB rates and charges apply

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14. Reserved for Future Use.

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15. Interface Groups, Transmission Specifications and Channel Interfaces

15.1 Switched Access Interface Groups

Interface Groups 1 through 10 are provided with Type A or B Transmission Specifications, depending on the Feature Group. This Interface Group is provided with Data Transmission Parameters.

Only certain interfaces are available at the customer's points of interconnection set forth in Section 8. preceding. The interfaces associated with the Interface Group may vary among Feature Groups. The various interfaces which are available with the Interface Group, and the Feature Groups with which it may be used, are set forth in 15.1.11 following.

15.1.1 Interface Group 1

Interface Group 1, except as set forth in the following, provides two-wire voice frequency transmission at the point of termination at the customer's premises. The interface is capable of transmission of voice and associated telephone signals within the frequency bandwidth of approximately 300 to 3000 Hz.

Interface Group 1 is not provided in association with FGD when the first point of switching is an access tandem. In addition, Interface Group 1 is not provided in association with FGD when the first point of switching provides only four-wire terminations.

The transmission path between the point of termination at the customer designated premises and the first point of switching may be comprised of any form or configuration of plant capable of and typically used in the telecommunications industry for the transmission of voice and associated telephone signals within the frequency bandwidth of 300 to 3000 Hz.

The interface is provided with loop supervisory signaling. When the interface is associated with FGA, such signaling will be loop start or ground start signaling. When the interface is associated with FGD, such signaling, except for two-way calling which is E&M signaling, will be reverse battery signaling.

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15. Interface Groups, Transmission Specifications and Channel Interfaces (Cont'd)

15.1 Local Transport Interface Groups (Cont'd)

15.1.2 Interface Group 2

Interface Group 2 provides four-wire voice frequency transmission at the point of termination at the customer designated premises. The interface is capable of transmission of voice and associated telephone signals within the frequency bandwidth of approximately 300 to 3000 Hz.

The transmission path between the point of termination at the customer designated premises and the first point of switching may be comprised of any form or configuration of plant capable of and typically used in the telecommunications industry for the transmission of voice and associated telephone signals within the frequency bandwidth of approximately 300 to 3000 Hz.

The interface is provided with loop supervisory signaling. When the interface is associated with FGA, such signaling will be loop start or ground start signaling. When the interface is associated with FGD, such signaling, except for two-way calling which is E&M signaling, will be reverse battery signaling.

15.1.3 Interface Group 3

Interface Group 3 provides group level analog transmission at the point of termination at the customer designated premises. The interface is capable of transmitting electrical signals between the frequencies of 60 to 108 kHz, with the capability to channelize up to 12 voice frequency transmission paths. Certain frequencies within the bandwidth of the Interface Group are reserved for KNAD's use, e.g., pilot and carrier alarm tones. Before the first point of switching,

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15. Interface Groups, Transmission Specifications and Channel Interfaces (Cont'd)

15.1 Local Transport Interface Groups (Cont'd)

15.1.3 Interface Group 3 (Cont'd)

KNAD will provide multiplex equipment to derive 12 transmission paths of frequency bandwidth of approximately 300 to 3000 Hz.

The interface is provided with individual transmission path SF supervisory signaling.

15.1.4 Interface Group 4

Interface Group 4 provides supergroup level analog transmission at the point of termination at the customer designated premises. The interface is capable of transmitting electrical signals between the frequencies of 312 to 522 kHz, with the capability to channelize up to 60 voice frequency transmission paths. Certain frequencies within the bandwidth of the Interface Group are reserved for KNAD's use, e.g., pilot and carrier group alarm tones. Before the first point of switching, KNAD will provide multiplex and channel bank equipment to derive 60 transmission paths of frequency bandwidth of approximately 300 to 3000 Hz.

The interface is provided with individual transmission path SF supervisory signaling.

15.1.5 Interface Group 5

Interface Group 5 provides mastergroup level analog transmission at the point of termination at the customer designated premises. The interface is capable of transmitting electrical signals between the frequencies of 564 to 3084 kHz, with the capability to Channelize up to 600 voice frequency transmission paths. Certain frequencies within the bandwidth of the Interface Group are reserved for KNAD's use, e.g., pilot and carrier group alarm tones. Before the first point of switching, KNAD will provide multiplex and channel bank equipment to derive 600 transmission paths of a frequency bandwidth of approximately 300 to 3000 Hz.

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15. Interface Groups, Transmission Specifications and Channel Interfaces (Cont'd)

15.1 Switched Transport Interface Groups (Cont'd)

15.1.5 Interface Group 5 (Cont'd)

The interface is provided with individual transmission path SF supervisory signaling.

15.1.6 Interface Group 6

Interface Group 6 provides DS1 level digital transmission at the point of termination at the customer designated premises. The interface is capable of transmitting electrical signals at a nominal 1.544 Mbps, with the capability to channelize up to 24 voice frequency transmission paths. Before the first point of switching, when analog switching utilizing analog terminations is provided, KNAD will provide multiplex and channel bank equipment to derive 24 transmission paths of a frequency bandwidth of approximately 300 to 3000 Hz. When digital switching or analog switching with digital carrier terminations is provided, KNAD will provide, at the first point of switching, a DS1 signal in D3/D4 format.

The interface is provided with individual transmission path bit stream supervisory signaling.

15.1.7 Interface Group 7

Interface Group 7 provides DS1C level digital transmission at the point of termination at the customer designated premises. The interface is capable of transmitting electrical signals at a nominal 3.152 Mbps, with the capability to channelize up to 48 voice frequency transmission paths. Before the first point of switching, when analog switching utilizing analog terminations is provided, KNAD will provide multiplex and channel bank equipment to derive up to 48 voice

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15. Interface Groups, Transmission Specifications and Channel Interfaces (Cont'd)

15.1 Switched Transport Interface Groups (Cont'd)

15.1.7 Interface Group 7 (Cont'd)

frequency transmission paths of a frequency bandwidth of approximately 300 to 3000 Hz. When digital switching or analog switching with digital carrier terminations is provided, KNAD will provide, at the first point of switching, DS1 signals in D3/D4 format.

The interface is provided with individual transmission path bit stream supervisory signaling.

15.1.8 Interface Group 8

Interface Group 8 provides DS2 level digital transmission at the point of termination at the customer designated premises. The interface is capable of transmitting electrical signals at a nominal 6.312 Mbps, with the capability to channelize up to 96 voice frequency transmission paths. Before the first point of switching, when analog switching utilizing analog terminations is provided, KNAD will provide multiplex and channel bank equipment in its office to derive up to 96 transmission paths of a frequency bandwidth of approximately 300 to 3000 Hz. When digital switching, or analog switching with digital carrier terminations is provided, KNAD will provide, at the first point of switching, DS1 signals in D3/D4 format.

The interface is provided with individual transmission path bit stream supervisory signaling.

15.1.9 Interface Group 9

Interface Group 9 provides DS3 level digital transmission at the point of termination at the customer designated premises. The interface is capable of transmitting electrical signals at a nominal 44.736 Mbps, with the capability to

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15. Interface Groups, Transmission Specifications and Channel Interfaces (Cont'd)

15.1 Switched Transport Interface Groups (Cont'd)

15.1.9 Interface Group 9 (Cont'd)

channelize up to 672 voice frequency transmission paths. Before the first point of switching, when analog switching utilizing analog terminations is provided, KNAD will provide multiplex and channel bank equipment to derive up to 672 transmission paths of a frequency bandwidth of approximately 300 to 3000 Hz. When digital switching, or analog switching with digital carrier terminations is provided, KNAD will provide, at the first point of switching, DS1 signals in D3/D4 format.

The interface is provided with individual transmission path bit stream supervisory signaling.

15.1.10 Interface Group 10

Interface Group 10 provides DS4 level digital transmission at the point of termination at the customer designated premises. The interface is capable of transmitting electrical signals at a nominal 274.176 Mbps, with the capability to channelize up to 4032 voice frequency transmission paths. Before the first point of switching, when analog switching utilizing analog terminations is provided, KNAD will provide multiplex and channel bank equipment to derive up to 4032 transmission paths of a frequency bandwidth of approximately 300 to 3000 Hz. When digital switching or analog switching with digital carrier terminations is provided, KNAD will provide, at the first point of switching, DS1 signals in D3/D4 format. The interface is provided with individual transmission path bit stream supervisory signaling.

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15. Interface Groups, Transmission Specifications and Channel Interfaces (Cont'd)

15.1 Switched Transport Interface Groups (Cont'd)

15.1.11 Available Premises Interface Codes

Following is a matrix showing, for each Interface Group, which premises interface codes are available as a function of KNAD's switch supervisory signaling and Feature Group. For explanations of these codes, see the Glossary of Channel Interface Codes in 15.3 following.

Interface Group	Telephone Company Switch Supervisory Signaling	Premises Interface Code	Feature Group D	
1	LO	2LS2		(C)
	LO	2LS3		
	GO	2GS2		
	GO	2GS3		
	LO, GO,	2DX3		
	LO, GO,	4EA3-E		
	LO, GO	4EA3-M		
	LO, GO,	6EB3-E		
	LO, GO,	6EB3-M		
	RV, EA, EB, EC	2DX3	X	
	RV, EA, EB, EC	4EA3-E	X	
	RV, EA, EB, EC	4EA3-M	X	
	RV, EA, EB, EC	6EB3-E	X	
	RV, EA, EB, EC	6EB3-M	X	
	EA, EB, EC	6EC3	X	
	RV	2RV3-0	X	
	RV	2RV3-T	X	
2	LO, GO	4SF2		
	LO, GO	4SF3		
	LO	4LS2		
	LO	4LS3		
	LO	6LS2		
	GO	4GS2		
	GO	4GS3		
	GO	6GS2		
	LO, GO	4DX2		
	LO, GO	4DX3		
	LO, GO	6EA2-E		(C)

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15. Interface Groups, Transmission Specifications and Channel Interfaces (Cont'd)

15.1 Local Transport Interface Groups (Cont'd)

15.1.11 Available Premises Interface Codes (Cont'd)

Interface Group	Telephone Company Switch Supervisory Signaling	Premises Interface Code	Feature Group D	
2 (Cont'd)	LO, GO	6EA2-M		
	LO, GO	8EB2-E		
	LO, GO	8EB2-M		
	LO, GO	6EX2-B		
	RV, EA, EB, EC	4SF2	X	
	RV, EA, EB, EC	4DX2	X	
	RV, EA, EB, EC	6EA2-E	X	
	RV, EA, EB, EC	6EA2-M	X	
	RV, EA, EB, EC	8EB2-E	X	
	RV, EA, EB, EC	8EB2-M	X	
	EA, EB, EC	8EC2-M	X	
	RV	4RV2-O	X	
	RV	4RV2-T	X	
3	LO, GO	4AH5-B		
	RV, EA, EB, EC	4AH5-B	X	
4	LO, GO	4AH6-C		
	RV, EA, EB, EC	4AH6-C	X	
5	LO, GO	4AH6-D		
	RV, EA, EB, EC	4AH6-D	X	
6	LO, GO	4DS9-15		
	LO, GO	4DS9-15L		
	RV, EA, EB, EC	4DS9-15	X	
	RV, EA, EB, EC	4DS9-15L	X	
7	LO, GO	4DS9-31		
	LO, GO	4DS9-31L		
	RV, EA, EB, EC	4DS9-31	X	
	RV, EA, EB, EC	4DS9-31L	X	
8	LO, GO	4DSO-63		
	LO, GO	4DSO-63L		
	RV, EA, EB, EC	4DSO-63	X	
	RV, EA, EB, EC	4DSO-63L	X	(C)

(C)

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15. Interface Groups, Transmission Specifications and Channel Interfaces (Cont'd)

15.1 Switched Transport Interface Groups (Cont'd)

15.1.11 Available Premises Interface Codes (Cont'd)

Interface Group	Telephone Company Switching Supervisory Signaling	Premises Interface Code	Feature Group D	
9	LO, GO	4DS6-44		
	LO, GO	4DS6-44L		
	RV, EA, EB, EC	4DS6-44	X	
	RV, EA, EB, EC	4DS6-44L	X	
10	LO, GO	4DS6-27		
	LO, GO	4DS6-27L		
	RV, EA, EB, EC	4DS6-27	X	
	RV, EA, EB, EC	4DS6-27L	X	(C)

15.1.12 Supervisory Signaling

- For Interface Groups 1 and 2

  DX Supervisory Signaling,
  E&M Type I Supervisory Signaling,
  E&M Type II Supervisory Signaling, or
  E&M Type III Supervisory Signaling

- For Interface Group 2

  SF Supervisory Signaling, or
  Tandem Supervisory Signaling

- For Interface Groups 3 through 5

  Optional Supervisory Signaling Not Available

- For Interface Groups 6 through 10

  These Interface Groups may, at the option of the customer, be provided with individual transmission path SF supervisory signaling where such signaling is available in Routing Exchange Carriers' central offices. Generally such signaling is available

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15. Interface Groups, Transmission Specifications and Channel Interfaces (Cont'd)

15.1 Switched Transport Interface Groups (Cont'd)

15.1.12 Supervisory Signaling (Cont'd)

only where the entry switch provides an analog, i.e., non digital, interface to the transport termination.

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15. Interface Groups, Transmission Specifications and Channel Interfaces (Cont'd)

15.2 Transmission Specification Switched Access Service

15.2.1 Standard Transmission Specifications

Following are descriptions of the two Standard Switched Access Service Feature Groups. The specific applications in terms of the Feature Groups are set forth in 6.2.2(B) and 6.2.4(B) preceding.

(A) Type A Transmission Specifications

Type A Transmission Specifications are provided with the following parameters:

(1) Loss Deviation

The maximum Loss Deviation of the 1004 Hz loss relative to the Expected Measured Loss (EML) is +/-2.0 dB.

(2) Attenuation Distortion

The maximum Attenuation Distortion in the 404 to 2804 Hz frequency band relative to the loss at 1004 Hz is -1.0 dB to +3.0 dB.

(3) C-Message Noise

The maximum C-Message Noise for the transmission path at the route miles listed is less than or equal to:

Route Miles	C-Message Noise
Less than 50	32 dBrnCO
51 to 100	34 dBrnCO
101 to 200	37 dBrnCO
201 to 400	40 dBrnCO
401 to 1000	42 dBrnCO

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15. Interface Groups, Transmission Specifications and Channel Interfaces (Cont'd)

15.2 Transmission Specification Switched Access Service (Cont'd)

15.2.1 Standard Transmission Specifications (Cont'd)

(A) Type A Transmission Specifications (Cont'd)

(4) C-Notched Noise

The maximum C-Notched Noise, utilizing a -16 dBmO holding tone, is less than or equal to 45 dBrnCO.

(5) Echo Control

Echo Control, identified as Equal Level Echo Path Loss, and expressed as Echo return Loss and Singing Return Loss, is equal to or greater than the following:

Echo Return Loss	Singing Return Loss
16 dB	11 dB

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15. Interface Groups, Transmission Specifications and Channel Interfaces (Cont'd)

15.2 Transmission Specification Switched Access Service (Cont'd)

15.2.1 Standard Transmission Specifications (Cont'd)

(B) Type B Transmission Specifications

Type B Transmission Specifications are provided with the following parameters:

(1) Loss Deviation

The maximum Loss Deviation of the 1004 Hz loss relative to the Expected Measured Loss (EML) is +/-2.5 dB.

(2) Attenuation Distortion

The maximum Attenuation Distortion in the 404 to 2804 Hz frequency band relative to loss at 1004 Hz is -2.0 dB to +4.0 dB.

(3) C-Message Noise

The maximum C-Message Noise for the transmission path at the route miles listed is less than or equal to:

	C-Message Noise	
Route Miles	Type B1	Type B2
Less than 50	32 dBrnCO	35 dBrnCO
51 to 100	33 dBrnCO	37 dBrnCO
101 to 200	35 dBrnCO	40 dBrnCo
201 to 400	37 dBrnCO	43 dBrnCO
401 to 1000	39 dBrnCO	45 dBrnCO

(4) C-Notched Noise

The maximum C-Notched Noise, utilizing a -16 dBmO holding tone is less than or equal to 47 dBrnCO.

(5) Echo Control

Echo Control, identified as Impedance Balance for FGA Equal Level Echo Path

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15. Interface Groups, Transmission Specifications and Channel Interfaces (Cont'd)

15.2 Transmission Specifications Switched Access Service (Cont'd)

15.2.1 Standard Transmission Specifications (Cont'd)

(B) Type B Transmission Specifications (Cont'd)

(5) Echo Control (Cont'd)

Loss for FGD, and expressed as Echo Return Loss (ERL) and Singing Return Loss (SRL) also differ by Feature Group. They are greater than or equal to the following:

Echo Return Loss	Singing Return Loss	
8 dB	4 dB	(C)

(6) Standard Return Loss

Standard Return Loss, expressed as Echo Return Loss and Singing Return Loss, on two-wire ports of a four-wire point of termination shall be equal to or greater than:

Echo Return Loss	Singing Return Loss
5 dB	2.5 dB

(C) Type C Transmission Specifications

Type C Transmission Specifications are provided with the following parameters:

(1) Loss Deviation

The maximum Loss Deviation of the 1004 Hz loss relative to the Expected Measured Loss (EML) is + 3.0 dB.

(2) Attenuation Distortion

The maximum Attenuation Distortion in the 404 to 2804 Hz frequency band relative to loss at 1004 Hz is -2.0 dB to +5.5 dB.

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15. Interface Groups, Transmission Specifications and Channel Interfaces (Cont'd)

15.2 Transmission Specifications Switched Access Service (Cont'd)

15.2.1 Standard Transmission Specifications (Cont'd)

(C) Type C Transmission Specifications (Cont'd)

(3) C-Message Noise

The maximum C-Message Noise for the transmission path at the route miles listed is less than or equal to:

Route Miles	C-Message Noise Type C1	C-Message Noise Type C2
Less than 50	32 dBrnCO	38 dBrnCO
51 to 100	33 dBrnCO	39 dBrnCO
101 to 200	35 dBrnCO	41 dBrnCO
201 to 400	37 dBrnCo	43 dBrnCO
401 to 1000	39 dBrnCO	45 dBrnCO

(4) C-Notch Noise

The maximum C-Notch Noise, utilizing a -16 dBmO holding tone is less than or equal to 47 dBrnCO.

(5) Echo Control

Echo Control, identified as Return Loss and expressed as Echo Return Loss and Singing Return Loss is dependent on the routing, i.e., whether the service is routed directly from the customer's point of termination (POT) to the end office or via an access tandem. It is equal to or greater than the following:

	Echo Return Loss	Echo Return Loss
POT to Access Tandem	13 dB	6dB
POT to End Office - Direct	13 dB	6dB

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15. Interface Groups, Transmission Specifications and Channel Interfaces (Cont'd)

15.2 Transmission Specifications Switched Access Service (Cont'd)

15.2.1 Standard Transmission Specifications (Cont'd)

(C) Type C Transmission Specifications (Cont'd)

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15. Interface Groups, Transmission Specifications and Channel Interfaces (Cont'd)

15.2 Transmission Specifications Switched Access Service (Cont'd)

15.2.2 Data Transmission Parameters

Two types of Data Transmission Parameters, i.e., Type DA and Type DB, are provided for the Feature Group arrangements. The specific applications in terms of the Feature Groups with which they are provided are set forth in 6.2.4(B) preceding. Following are descriptions of each.

(A) Data Transmission Parameter Type DA

(1) Signal to C-Notched Noise Ratio

The Signal to C-Notched Noise Ratio is equal to or greater than 33 dB.

(2) Envelope Delay Distortion

The maximum Envelope Delay Distortion for the frequency bands and route miles specified is:

	604 to 2804 Hz
less than 50 route miles	500 microseconds
equal to or greater than 50 route miles	900 microseconds

	1004 to 2404 Hz
less than 50 route miles	200 microseconds
equal to or greater than 50 route miles	400 microseconds

(3) Impulse Noise Counts

The Impulse Noise Counts exceeding a 65 dBrnCO threshold in fifteen (15) minutes is no more than fifteen (15) counts.

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15. Interface Groups, Transmission Specifications and Channel Interfaces (Cont'd)

15.2 Transmission Specifications Switched Access Service (Cont'd)

15.2.2 Data Transmission Parameters (Cont'd)

(A) Data Transmission Parameters Type DA (Cont'd)

(4) Intermodulation Distortion

The Second Order (R2) and Third Order (R3) Intermodulation Distortion products are equal to or greater than:

Second Order (R2)	33 dB
Third Order (R3)	37 dB

(5) Phase Jitter

The Phase Jitter over the 4-300 Hz frequency band is less than or equal to 5 degrees peak-to-peak.

(6) Frequency Shift

The maximum Frequency Shift does not exceed -2 to + 2 Hz.

(B) Data Transmission Parameters Type DB

(1) Signal to C-Notched Noise Ratio

The signal to C-Notched Noise Radio is equal to or greater than thirty (30) dB.

(2) Envelope Delay Distortion

The maximum Envelope Delay Distortion for the frequency bands and route miles specified is:

	604 to 2804 Hz
less than 50 route miles	800 microseconds
equal to or greater than 50 route miles	1000 microseconds

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15. Interface Groups, Transmission Specifications and Channel Interfaces (Cont'd)

15.2 Transmission Specifications Switched Access Service (Cont'd)

15.2.2 Data Transmission Parameters (Cont'd)

(B) Data Transmission Parameters Type DB (Cont'd)

(2) Envelope Delay Distortion (Cont'd)

	1004 to 240 4 Hz
less than 50 route miles	320 microseconds
equal to or greater than 50 route miles	500 microseconds

(3) Impulse Noise Counts

The Impulse Noise Counts exceeding a 67 dBrnCO threshold in fifteen (15) minutes is no more than fifteen (15) counts.

(4) Intermodulation Distortion

The Second Order (R2) and Third Order (R3) Intermodulation Distortion products are equal to or greater than:

Second Order (R2)	31 dB
Third Order (R3)	34 dB

(5) Phase Jitter

The Phase Jitter over the 4-300 Hz frequency band is less than or equal to 7 degrees peak-to-peak.

(6) Frequency Shift

The maximum Frequency Shift does not exceed -2 to +2 Hz.

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